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# Assessing the Impact of Intergroup Contact and Diversity training on Employers' Hiring Attitudes, Intentions and Behaviours Toward Refugees

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Assessing the Impact of Intergroup Contact and Diversity training on Employers' Hiring  
Attitudes, Intentions and Behaviours Toward Refugees

by

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A THESIS

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## **Abstract**

The aims of this research project are to examine the impact of intergroup contact and diversity training on the general attitudes, hiring attitudes, hiring intentions, and hiring behaviour toward refugees among hirers residing in the United States. Hirers are operationalized as individuals with the final authority to make hiring decisions within their organizations. Refugees are a vulnerable and disadvantaged social group who face a number of barriers to successful employment. Studies exploring refugees in employment contexts are exceedingly rare, but integral to understanding refugee employment outcomes. Based on previous literature, two mediators for why intergroup contact and diversity training may impact attitudes toward social groups were examined: group empathy and intergroup anxiety. A sample of hirers ( $N = 379$ ) was recruited from Amazon's Mechanical Turk using a two-step methodology, with the goal of increasing data quality through the reduction of participant misrepresentation. Intergroup contact quantity, intergroup contact quality and diversity training all were associated with general attitudes toward refugees, with intergroup contact quantity/quality both being fully mediated by empathy and intergroup anxiety. The impact of diversity training on general attitudes was fully mediated only by group empathy. When comparing the predictors simultaneously, intergroup contact quality appears to have the strongest relationship on most hiring outcomes. However, hiring intentions were not found to predict hiring behaviour toward refugees. Several explanations for this are explored. Nonetheless, this research provides valuable contributions to knowledge surrounding intergroup contact theory and diversity training, and their relations with hiring of disadvantaged social groups, specifically refugees. Future research on this topic should explore these variables experimentally, to help establish causality and temporal directionality of these variables.

## **Preface**

This thesis is original, unpublished, independent work by the author, Harrison Boss. The study reported in this thesis were covered by Ethics Certificate number REB18-0887, issued by the University of Calgary Conjoint Faculties Research Ethics Board on December 3<sup>rd</sup>, 2018.

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## Table of Contents

Preface.....	iii
Acknowledgements.....	iv
List of Tables .....	vii
List of Figures .....	viii
The Importance of Studying Refugees .....	11
The Importance of Studying Employers .....	12
Theoretical Approach.....	14
Diversity Training .....	15
Explanatory processes .....	17
Empathy.....	18
Intergroup Anxiety. ....	18
Conceptual Model .....	19
Social Dominance Orientation .....	21
Hypotheses .....	22
Methodology .....	25
Participants and Procedure .....	25
Measures.....	28
Demographics .....	28
Refugee Definition. ....	28
Social dominance orientation. ....	28
Intergroup contact.....	28
Diversity training experience.....	29
Group empathy. ....	30
Intergroup anxiety.....	30
General attitudes. ....	30
Hiring attitudes toward refugees.....	30
Hiring intentions. ....	31
Hiring behaviour.....	31
Results.....	31
Preliminary Analyses and Assumption testing.....	31

Refugee definition .....	34
Relations Between Variables .....	35
Mediation testing.....	37
Moderation testing.....	39
Exploratory Moderation Analyses .....	40
Other Supplementary Analyses .....	42
Results summary .....	42
Discussion .....	44
Hiring intentions and hiring behaviour .....	47
Role of Social Dominance Orientation .....	50
Limitations and Future Directions.....	51
Conclusions .....	56
References .....	58
Tables .....	65
Figures.....	73
Footnotes .....	81
Appendix A.....	82
Appendix B .....	84
Appendix C .....	90

## **List of Tables**

Table 1. Correlation Matrix of Measured Variables .....	65
Table 2. Descriptive Statistics for Measured Variables.....	67
Table 3. Overview of Hypotheses, Results, and Support .....	68
Table 4. Contact quantity predicting intergroup anxiety as moderated by SDO .....	69
Table 5. Contact quality predicting intergroup anxiety as moderated by SDO .....	70
Table 6. Correlation Matrix of Measured Variables with Dichotomous Hiring Behaviour .....	71



## List of Figures

Figure 1. A theoretical model for intergroup contact, diversity training, mediating mechanisms, attitudes, and intention/behaviour toward refugees. ....	73
Figure 2. Mediated relationship between contact quantity and general attitudes. ....	74
Figure 3. Mediated relationship between contact quality and general attitudes. ....	75
Figure 4. Mediated relationship between diversity training and general attitudes. ....	76
Figure 5. Path analysis of relationship between contact quality to hiring intentions. Only significant paths presented. Standardized paths presented. ....	77
Figure 6. Moderated relationship of contact quality and SDO on intergroup anxiety.....	78
Figure 7. Moderated relationship of contact quality and SDO on intergroup anxiety.....	79
Figure 8. Path analysis of relationship between contact quality to dichotomous hiring behaviour .....	80

## Assessing the Impact of Intergroup Contact and Diversity training on Employer' Hiring Attitudes, Intentions, and Behaviours Toward Refugees

“I’ve applied for over 100 jobs, I’m waiting. For me it’s not easy” said Cyprien Séguin in a 2017 CBC interview (Hoye, 2017, para. 1). Séguin arrived in Canada in 2016 as a refugee, and one year later was still unable to find a job in his new home. Unfortunately, stories like this are not uncommon for refugees seeking employment in a new country. There are a number of barriers to securing a job for refugees, and one of the most difficult to overcome is employment discrimination. Discrimination by those in charge of hiring may explain Séguin’s and other refugees’ trouble finding employment. This form of discrimination is the focus of this thesis.

Refugees are legally defined as individuals forced to flee their country, often due to war, or fear of persecution due to ethnicity, religion, political orientation, or membership in certain social groups (United Nations High Commissioner for Refugees [UNHCR], 2018a). Defining refugees is complex (for or a discussion of the intricacies surrounding the operationalization of refugees, see FitzGerald & Arar, 2018), but this is the definition that guided my research. In the American context (which my research examines), refugees often arrive in the U.S. following recommendation by the United Nations High Commissioner for Refugees (UNHCR), the US Embassy, or other non-governmental organizations. These individuals are initially screened, and approved individuals are sent to US Resettlement Support Centres (RSCs). Potential incoming refugees are adjudicated through further interviews and may be aided by family members currently residing in the United States (Department of State, 2018). Should background and medical checks come back without issue, these individuals are allowed into the United States, but this process may take approximately 2 years. In the American system, refugees apply to enter the US from a third country. For example, an individual may be forced to flee their homeland in

Syria due to war, and then flees to a refugee camp in Lebanon. A refugee may then be recommended by the UNHCR in Lebanon to go to the United States for resettlement. If deemed acceptable by the host country, these are known as convention refugees. This differs from an individual who directly travels to a country they wish to resettle in, and then claiming refugee status. These individuals tend to be referred to as asylum seekers or refugee claimants and follow a different process to be accepted. Ultimately, these individuals need to be assessed by the government of the host country, which in many cases, can take years. Similar processes for refugee entry exist for Canada, with refugees being further divided by the main sponsor for their support (e.g., private versus government support).

Convention refugees are typically allowed to work immediately upon gaining entry into the United States (United States Citizenship and Immigration Services, 2018) or Canada (Immigration and Citizenship Canada, 2018). In the United States, asylum seekers can apply for permission to work 150 days after filing their asylum application or may work upon being granted asylum (United States Citizenship and Immigration Services, 2019). Refugee claimants in Canada may apply for temporary work permits and be allowed to work until a ruling can be made (Immigration and Citizenship Canada, 2018).

A large number of refugees have arrived in North America in recent years. Between January 2015 and April 2017 over 100,000 refugees arrived in Canada (Government of Canada, 2017) and 340,000 refugees arrived in the United States since 2014 (Department of State, 2018). It is important to understand the challenges that are faced by this sizable proportion of newcomers as they attempt to settle in their new country. One major hurdle to stable integration into society for refugees relates to difficulty obtaining successful employment. As noted above, refugees face a wide array of barriers in finding and securing work. One major barrier comes in

the form of employer discrimination. This may manifest as credential recognition problems (Krahn, Derwing, Mulder, & Wilkinson, 2000), disparaging comments (Austin & Este, 2001), application rejections (Oreopolous, 2009) or exploitation (Austin & Este, 2001; Jackson & Bauder, 2014; Krahn et al, 2000). Certain employers may have more negative attitudes toward hiring refugees and hence resist hiring them. The focus of the proposed research will be on factors that may influence the degree to which hirers are willing to employ refugees. The degree of intergroup contact (Allport, 1954; Pettigrew & Tropp, 2006) between employers and refugees, the presence/type of diversity training employers engage in (Fowler, 2005, Kalinowski, Steele-Johnson, Peyton, & Leas, 2013; Kulik & Roberson, 2008, Paluck & Green, 2009), and certain individual differences may be important factors to consider when examining discriminatory behaviours toward refugees in employment contexts.

### **The Importance of Studying Refugees**

Refugees and immigrants are often grouped together and considered one in the same in academic studies. Indeed, refugees and other immigrant groups share a number of similarities through the common process of arriving at their destination country as newcomers. Both groups may face similar barriers revolving around integration, employment, and settlement. Despite these similarities, there are several fundamental differences that make differentiating between refugees and immigrants important (Yu, Ouellet, & Warmington, 2007). Arrival in the new country for immigrants is a deliberate and well-planned event, in contrast with refugees, who flee their home country by necessity. Many refugees arrive with little knowledge of their new country (Krahn et al, 2000), with severed social supports, extreme variability in local language proficiency, and mental health issues relating to trauma (Drolet et al, 2017), making their integration particularly challenging. Additionally, refugees often face issues in re-acquiring their

educational and professional credentials from their home country. The documentation (degrees, certifications, designations) required by many employers may be inaccessible due to the state of their home country, or their status within that country.

Interviews with Albertan refugees revealed some of these issues, with refugees reporting no availability of original papers due to everything being lost in the war (Krahn et al, 2000). Even if a refugee's credentials are accessible, they may not be recognized by employers. Over 40% of refugees interviewed in Alberta experienced issues with having their credentials recognized, often with Canadian employers either devaluing or being mistrustful of foreign experience (Krahn et al, 2000). It is not surprising then to find that refugee groups in Canada have significantly different, often poorer, economic outcomes than immigrant groups (Yu et al, 2007). When comparing newcomers in Alberta 3 years after arriving, skilled worker/economic class immigrants had a mean annual income of \$55,000; family class immigrants had a mean annual income of \$34,000; privately-sponsored refugees had a mean annual income of \$30,000, government-assisted refugees had a mean annual income of \$23,000, and Landed-in-Canada (approved-claimants) had a mean annual income of \$47,000 (Stats Canada, 2017). Refugees in the United States also tend to have lower incomes than other immigrant groups (Capps et al, 2015). Some of these disparities in income may be due in part to unemployment or underemployment related to discriminatory behaviours. Given these disparities, it is valuable to focus on employment discrimination toward refugees specifically, rather than on immigrants more generally.

### **The Importance of Studying Employers**

Employers are the gatekeepers to economic stability for the majority of adults. It is integral to understand the motivations behind employers' attitudes towards refugees, and in turn

their hiring behaviours towards this group. Employers have enormous leeway to judge job candidates based on non-employment based information, like ethnicity (Oreopolous, 2011; Bertrand & Mullainathan, 2004), gender (Derous et al, 2016), physical attractiveness (Diboye, 2005), or disabilities, (Hayes & Macan, 1997) particularly when reviewing job applications (Oreopolous, 2009; Bertrand & Mullainathan, 2004) or when they conduct unstructured interviews (Levashina, Hartwell, Morgeson, & Campion, 2014). Once an employer is aware of some sort of stigmatized feature or characteristic of a job candidate, this information may bias the interviewer, particularly if it occurs in the initial impression forming period (Derous et al, 2016). What characteristics may trigger bias in an employer may be very personal, certainly based on the job candidate, but also based on the experiences or personal characteristics of the employer. Certain characteristics of job candidates may also result in statistical discrimination toward refugees. The theory of statistical discrimination suggests that information surrounding group memberships, often based on stereotypes, may be used as a proxy for the productivity of a potential job candidate. Statistical discrimination tends to be most prevalent when job markets are highly competitive (Tomaskovic-Devey & Skaggs, 1999). An employer may not consider hiring a refugee candidate due to stereotypes regarding the group having less proficient English language skills, mental health issues, or educational/credential differences, excluding potentially well-suited candidates from consideration.

It is important to gain insight into what factors might influence attitudes, intentions, and behaviours toward hiring refugees as a means to understand where bias may stem from. This is critical in informing attempts to eliminate or reduce bias. The focus on this project is specifically on hirers: individuals that have the final authority to make hiring decisions at their place of

business. These hirers have a direct impact on the employment outcomes of refugee job candidates, and thus are a valuable population to study.

### **Theoretical Approach**

This project is informed by intergroup contact theory (Pettigrew & Tropp, 2006; Allport, 1954), which posits that greater contact with a member (or members) of a social group different than one's own reduces bias (this includes stereotypes, prejudicial attitudes, and discriminatory behaviours) toward that social group. It appears that intergroup contact is most effective when that contact is positive in quality and occurs on multiple occasions. Quality of contact between different groups is important, as the effect of negative contact on heightening bias has been shown to be stronger than the effect of positive contact on lowering bias (Barlow et al, 2012). Although it is well-established that positive intergroup contact is reliability associated with lower prejudice (Pettigrew & Tropp, 2006), the association between intergroup contact and behaviour is less well-established (MacInnis & Hodson, 2018). There is some evidence that intergroup contact leads to more positive behaviour (i.e. less discrimination), but the studies exploring this have been limited (Johnson & Johnson, 1981; McKeown, Williams, & Pauker, 2017) and the effects on behaviour have tended to be weaker than those on attitudes (e.g. Van Laar, Levin, Sinclair, & Sidanius, 2005). It is important to investigate how intergroup contact is related to the hiring attitudes, and how those attitudes influence intentions and actual hiring behaviour in turn.

In the context of the workplace, better quality intergenerational contact has been found to be associated with greater hiring intentions toward older adults. Greater intergenerational contact quantity was also associated with increasing willingness to hire older individuals overall, but greater contact quantity could make hirers less willing to hire older individuals in situations where hirers already held negative attitudes toward older adults (Fasbender & Wang, 2017).

Whereas these results focus on hiring intentions, they may also extend to actual hiring behaviour, but this has not been explored. Although the literature exploring the impact of intergroup contact on hiring is very limited, contact has been shown to improve general attitudes toward a number of different social groups, including some in work contexts. For instance, intergroup contact has been found to improve relations between disabled employees and their peers, if those peers had an opportunity to get to know the disabled co-worker on an individual level (Novak, Feyes, & Christensen, 2011). When exploring the relationship between intergroup contact and tolerance toward immigrants, Thomsen (2012) found that Danish individuals who had more contact with immigrants in work settings had more positive attitudes toward Muslim immigrants. Specifically, those who had spoken to with immigrants at work more frequently had greater ethnic tolerance toward immigrants. Thus, intergroup contact (including workplace contact) improves attitudes generally. Intergroup contact may also promote more positive attitudes toward hiring, but this has not been thoroughly explored.

In general, intergroup contact shows promise as a means to improve attitudes toward social outgroups and reduce prejudice in laboratory settings as well as limited field studies. It is important to investigate it in larger, applied, and real-world contexts. This project aimed to provide theoretical contributions to understanding and assessing the relationship between intergroup contact, attitudes, intentions, and hiring behaviour in an organizational context, specifically among those with the authority to make final decisions for hiring.

### **Diversity Training**

Intergroup contact interventions share several features with diversity training initiatives created or utilized by organizations that aim to provide employees with a better understanding of “different others” that they may interact with in their workplaces. Some have operationalized



diversity training as any program that is designed to increase positive, or decrease negative, intergroup behaviours (Pendry, Driscoll, Field, 2007). Both intergroup contact and diversity training share distal goals, notably, to improve the relationships between groups and reduce various forms of discrimination (Fowler, 2006), but they often differ in their methodologies. Instead of explicitly having interactions with an outgroup, diversity training provides information and knowledge about these outgroups to trainees. Gaining knowledge about outgroups can be a meaningful way of reducing bias and has been shown to be a mediator by which intergroup contact reduces prejudice (Pettigrew & Tropp, 2008). Diversity training rests on knowledge being acquired and retained, and then applied by a trainee, to change their affect, cognitions, or behaviour towards outgroups, be it co-workers, clients, or job applicants. In conjunction with providing knowledge about outgroups, diversity training may be aimed at promoting perspective-taking and fostering empathy toward these groups. Results from longitudinal experiences with American undergraduate students indicate that perspective taking may have positive effects on diversity-related outcomes. In fact, diversity training programs that target specific social groups for prejudice reduction may also generalize across other outgroups (Lindsey, King, Hebl, & Levine, 2015). Overall, these findings fall in line with meta-analytical findings that indicate that cognitive perspective taking, and affectively related empathy, are strong mediators between intergroup contact and prejudice reduction (Pettigrew & Tropp, 2008). Thus, intergroup contact and diversity training may reduce bias (or at least attempt to reduce bias) through similar means.

Diversity training has been utilized in employment contexts for about 40 years (Kulik & Roberson, 2008) and is utilized by almost 70% of organizations in the United States (Esen, 2005). What training actually looks like may vary significantly between organizations (and sometimes even within the same organization). Training may be oriented toward, but not limited

to, reducing hirer bias, promoting diversity-positive workplace cultures, and improving intra-organizational relations. Many diversity training programs also seek to make a “business case” for engaging in their programs, looking for any competitive advantage that a diverse workforce may provide, to comply with legal requirements, or meet social demands (Bezrukova, Spell, Perry, & Jehn, 2016; Kalinoski et al, 2013; Kulik & Roberson, 2008). The efficaciousness of diversity training can be difficult to quantify, given the various goals of these programs, ranging between affective, cognitive, or skill-based outcomes (Kalinowski et al, 2013). Recent meta-analytical findings indicate that certain characteristics seem to make the training more effective for these outcomes. Diversity training that was longer in duration and was conducted over multiple sessions had greater effect sizes on affective diversity outcomes, like attitudes and motivations of participants. Additionally, those distributed over multiple sessions were found to be more effective for cognitive-based outcomes, like verbal knowledge. It has been suggested that these features make diversity training more effective due to greater opportunities for social interaction. Diversity training that was conducted by an internal manager or direct supervisor was also more effective at improving affective outcomes, possibly due to increasing trainee motivation (Kalinowski et al, 2013). For this research, I will focus on the training duration, spacing, and trainer type to assess type of diversity training hirers have been involved in to categorize their training as more or less optimal.

### **Explanatory processes**

Assessing the relationship between intergroup contact and diversity training on refugee hiring attitudes and behaviour among employers is an important. Evidence suggests that intergroup contact and/or diversity training may be associated with more positive hiring attitudes/ behaviours toward refugees, but it is also important to determine why or how those

factors improve attitudes. Current meta-analytic research has indicated that both empathy and intergroup anxiety are mediating mechanisms that explain why intergroup contact reduces prejudice (Pettigrew & Tropp, 2008).

### **Empathy.**

Empathy has been operationalized as an emotional response to another person's welfare, often with feelings of sympathy, compassion, and tenderness (Batson et al, 1997). Feeling empathic toward a refugee may result in more positive attitudes and evaluations of refugees. Empathy may arise from imagining how others feel (perspective taking). It can result in altruistic motivations (Batson, Early, & Salvarni, 1997) and has been shown to be associated with less prejudice (Bäckström, & Björklund, 2007). There is also evidence that empathy is not static, and can be manipulated/increased through training programs, particularly through encouraging perspective taking (Erera, 1997). In an experimental and longitudinal study, it was found that diversity training programs that involved perspective taking, a factor strongly interrelated with empathy (Pettigrew & Tropp, 2008), had positive effects on behaviours toward sexual minorities, (Lindsey et al, 2015). In a study by Turner, Hewstone, and Voci (2007), cross-group friendships (i.e., a specific type of intergroup contact) between students belonging to different ethnic groups resulted in greater outgroup attitudes. A key mediator of this relationship was empathy. In this project I will assess whether intergroup contact or diversity training may result in greater empathy towards refugees and in turn more positive general attitudes toward refugees.

### **Intergroup Anxiety.**

Individuals can experience anxiety when interacting with people belonging to different groups; this is known as intergroup anxiety. These experiences amplify emotional reactions,

biases, normative behaviours (Stephan & Stephan, 1985), and have even been shown to result in physiological anxiety (Blascovitch, Mendes, Hunter, Lickel, & Kowai-Bell, 2001). However, intergroup contact appears to reduce intergroup anxiety between groups (Blascovitch et al, 2001; Pettigrew & Tropp, 2008), notably toward immigrants (Voci & Hewstone, 2003). Meta-analytic results indicate that these reductions in intergroup anxiety through intergroup contact lead to reduced prejudice (Pettigrew & Tropp, 2008). Diversity training may provide knowledge about outgroups to trainees, and in-turn reduce the anxiety they feel when faced in actual interactions with that social group. There is evidence that diversity training can have positive effects on affectively-based outcomes like attitudes, self-efficacy, and motivation (Kalinowski et al, 2013), so it is reasonable to investigate if this may be due to reductions in anxiety toward outgroups. In the context of this research project, hirers that have had little to no intergroup contact with refugees will likely have higher levels of intergroup anxiety, while those with greater/more positive contact with refugees in the past will likely have lower intergroup anxiety. Similarly, I anticipate that hirers that have not engaged in diversity training or training with few optimal conditions will have greater intergroup anxiety, while those who have engaged in more optimal training will have lower levels. Intergroup anxiety levels should mediate the relationships between intergroup contact and general attitudes toward refugees, such that those with lower intergroup anxiety will likely have more positive general attitudes toward refugees. Similarly, hirers that have engaged in more optimal diversity training may have less intergroup anxiety toward refugees and, in turn, more positive general attitudes toward refugees.

### **Conceptual Model**

My aim was to assess the relationships between a hirers' intergroup contact (quality and quantity) and diversity training on general attitudes, hiring attitudes, hiring intentions, and hiring

behaviour toward refugees. First, I anticipated that my three predictors, intergroup contact quantity, intergroup contact quality, and diversity training, would have an impact on hirers' attitudes toward refugees through the mediating mechanisms of intergroup anxiety and empathy. The theory of planned behaviour (TPB) (Ajzen, 1991) suggests that individuals' attitudes and values inform their behavioural intentions. In turn, one's behaviour should tend to be consistent with one's intentions. In line with TPB, I anticipated that these attitudes would predict hirers' intentions to hire refugees. Also consistent with TPB, these intentions to hire refugees would predict hirers' actual hiring behaviour.

Meta-analytic findings suggest a moderately high correlation of  $r = .49$  between attitudes and behavioural intentions, and  $r = .47$  between behavioural intentions and actual behaviours (Armitage & Conner, 2001). In the context of the workplace, recent research indicates that decision-makers' intentions to hire older individuals influence their actual hiring behaviours (Fasbender & Wang, 2017b). Similarly, Araten-Bergman (2016) explored attitudes, hiring intentions, and hiring behaviour toward persons with disabilities, with attitudes significantly predicting hiring intentions. Additionally, diversity related features, such as having training surrounding persons with disabilities, also resulted in greater hiring intentions. It is reasonable to speculate similar relationships may exist between hiring intentions towards refugees, and actual hiring behaviour. See Figure 1 for a conceptual model depicting the expected pattern of relations.

There is also evidence that suggests that intergroup contact may have a stronger impact on attitudes/prejudice than diversity training. In the meta-analysis by Kalinoski et al (2013), the effect size (Cohen's  $d$ ) for diversity training's impact on attitudes was .20. In their large scale meta-analysis on intergroup contact, Pettigrew & Tropp (2006) found that the impact of contact on prejudice, at least in experiments, had a Cohen's  $d$  effect size of -.71. There is also ample

evidence that intergroup contact reduces intergroup anxiety and generates empathy (Pettigrew & Tropp, 2008), but these relationships are less well established for diversity training.

### **Social Dominance Orientation**

Beyond the theoretical model in Figure 1, I expected that the individual difference, social dominance orientation, might play a role in how intergroup contact quantity, intergroup contact quality, and diversity training impact by variables of interest. Social dominance orientation (SDO) is an individual-level socio-political attitude; those higher in SDO endorse preferences for group inequality, particularly an interest in one's ingroup dominance over other social groups (Pratto, Sidanius, Stallworth, & Malle, 1994). A hirer's level of SDO may be important to consider when assessing the efficaciousness of intergroup contact or diversity training on attitudes toward refugees. SDO is strongly related to prejudice and workplace bullying (Parkins, Fishbein, & Ritchey, 2006). SDO has also been found to predict prejudicial attitudes in general (Cohrs & Stelzl, 2010) and is considered one of the strongest predictors of prejudice in general (Duckitt, 2005). Individuals that are higher in SDO tend to avoid interactions with outgroup members, however when those interactions are unavoidable and do occur, it appears that these individuals may benefit the most from the prejudice-reducing effects of intergroup contact (Dhont & Van Hiel, 2009; Hodson, MacInnis, & Costello, 2013; Hodson, 2008; but for an exception, see Asbrock, Christ, Duckitt, & Sibley, 2012). Those higher on SDO may gradually return to their original bias-prone tendencies following contact (MacInnis & Page-Gould, 2015).

Individuals that are higher in SDO tend to have lower levels of empathy and concern for others (Duckitt & Sibley, 2010; Hodson, 2008; Pratto et al, 1994). It also appears that level of SDO may affect an individual's level of empathetic concern for others (Sidanius et al, 2013). Given its strong association with prejudice, discriminatory behaviour, and potential effects on

empathy toward others, I assessed SDO in this study. SDO may moderate the relationships between intergroup contact/diversity training and empathy toward refugees, thus having an impact on attitudes toward refugees, and thus hiring attitudes, intentions, and behaviours down the line. (e.g. perhaps intergroup contact may be effective for individuals higher in SDO, as it may increase their empathy toward refugees).

### **Hypotheses**

I investigated the impact of intergroup contact and diversity training on hirers' general attitudes, as well as their hiring attitudes, hiring intentions, and hiring behaviours toward refugees. Additionally, I explored how SDO might moderate some of these relationships. Consistent with the theoretical model depicted in Figure 1, I proposed the following hypotheses and research questions. These hypotheses were pre-registered on AsPredicted.org, and this pre-registration can be found in Appendix A.

Hypothesis 1) Higher contact quantity will be associated with a) greater empathy toward refugees b) lower intergroup anxiety, and c) more positive general attitudes toward refugees.

Hypothesis 2) Higher contact quality will be associated with a) greater empathy toward refugees, b) lower intergroup anxiety and c) more positive general attitudes toward refugees

Hypothesis 3) Diversity training under optimal conditions (in person, over 4 hours, spaced out sessions, and internal manager/direct supervisor led), will be associated with a) greater empathy toward refugees b) lower intergroup anxiety, c) more positive attitudes toward refugees.

Hypothesis 4) Both empathy and intergroup anxiety will mediate the relationship between intergroup contact quantity and general attitudes toward refugees.

Hypothesis 5) Both empathy and intergroup anxiety will mediate the relationship between intergroup contact quality and general attitudes toward refugees.

Hypothesis 6) Both empathy and intergroup anxiety will mediate the relationship between diversity training and general attitudes toward refugees.

Hypothesis 7) More positive general attitudes toward refugees will predict more positive hiring attitudes toward refugees.

Hypothesis 8) More positive hiring attitudes will predict a) greater hiring intentions and b) greater hiring behaviour.

Hypothesis 9) Greater hiring intentions will predict greater hiring behaviour.

Hypothesis 10) Both intergroup contact quantity and quality will predict both the mediating mechanisms of empathy and intergroup anxiety and all relationships more strongly than diversity training (when hypotheses 4-9 are tested individually).

Hypothesis 11) Both intergroup contact quantity and quality (but not diversity training) will predict both mediating mechanisms of empathy and intergroup anxiety and all relationships (when hypotheses 4-9 are tested simultaneously).

Research Question 1) I will explore whether SDO moderates the relationship between a) intergroup contact quantity and general attitudes toward refugees. It is possible that this relationship may be stronger for those higher in SDO than those lower in SDO. This pattern may also be found for b) intergroup contact quality.

Research Question 2) SDO may also moderate the relationship between diversity training and general attitudes toward refugees.



Research Question 3) I will test whether SDO moderates the relationships between contact a) quantity b) quality) c) diversity training and empathy toward refugees. This is exploratory, as SDO may weaken or strengthen the positive relationship between contact/diversity training and empathy

## Methodology

### Participants and Procedure

All participants were recruited through Amazon's MTurk, using the graphical user interface TurkPrime (Litman, Robinson & Abberbock, 2017). Eligible participants were required to be over the age of 18 and be residing in the United States. A short 2-minute pre-screen was created as a qualifier for the main study, as I sought to only query those with the authority to make final hiring decisions at their place of work. The key qualifying question was "At your current/past places of employment have you engaged in any of the following activities? (please select **all** that apply)" with the response "Made final hiring decisions for personnel" needing to be selected for eligibility. Importantly, although the purpose of the pre-screen was to act as a qualifier for this thesis research, it included a variety of questions on a number of different topics (e.g., employment status, workplace incivility, diet, job interview experience, political orientation, and personality characteristics). The breadth of question topics was important, as it helped ensure the purpose of the pre-screen remain ambiguous to research participants. Recent research has indicated that if participants have knowledge of the desired participant characteristics of a survey, a non-trivial proportion may misrepresent themselves as belonging to the target group, in an attempt to gain access to the survey or future surveys (Wessling et al, 2017). Misrepresentation can have detrimental effects on a study's internal and external validity (Siegel & Navarro, 2019; Wessling et al, 2017). Another reason for the variety of questions was that the pre-screen is being used as an ongoing database for various lines of research. A total of 4128 individuals completed the pre-screen and were rewarded \$0.25 USD. Participants had the opportunity to withdraw at any time. All participants indicated whether they wished to be considered for potential future research studies.

A control measure was included in the pre-screen, in an attempt to further minimize participant misrepresentation. As noted above, one pre-screen measure assessed the work experience of participants, while the main aim was to identify those with full authority to make hiring decisions. This set of questions also included an option for participants to indicate experience with the “BTE Organizational System” among a number of items involving real work experience. To the best of my knowledge, this organizational system does not exist, and this fictional item was aimed to further limit misrepresentation. Ideally, fictitious items should not be easily distinguishable from legitimate responses, otherwise they may only act as an attention check. This item was included as some participants may endorse fictitious items in an attempt to qualify themselves for future surveys (Goodman, Cryder, & Cheema, 2013; Downs-Le Guin, Mechling, & Baker, 2006), this may be particularly problematic when response options allow for multiple selections. Alternatively, participants might endorse fictitious items due to memory bias or inattention. Regardless, to maximize data quality, this item was included with the intention to filter out participants endorsing it from further studies.

Approximately 1 month after completing the pre-screen, through MTurk, I contacted participants that reported having full authority to make hiring decision and consented to be contacted for future studies ( $N = 841$ ) to complete the main thesis survey. This two-step recruitment methodology has been strongly recommended when working with crowdsourcing platforms, especially when aiming to recruit from specialized populations (Wessling, Huber, & Netzer, 2017). In total, 550 slots were made available to the eligible participants, resulting in 569 individuals accessing the survey, which allowed for incomplete data or technical issues. An a priori power analysis for linear multiple regression to detect small-to-medium effect sizes at .95 power yielded a required sample size of 434. I oversampled, given that it was expected ahead of

time that not all participant data would be analyzed. Participants were removed from final analyses for the following reasons: 1) if they did not re-consent after the main study debriefing,  $N = 1$ , 2) if they withdrew part way through the survey,  $N = 19$ , 3) if they failed either of the two attention checks (one math question, and one requesting the selection of “strongly disapprove”),  $N = 6$  or 4) if they misrepresented themselves – based on the two-step recruitment methodology. Participants were considered as misrepresenting if any of their responses that would be expected to remain consistent between the pre-screen and the main study did not remain consistent. Specifically, given that age and hiring authority were assessed in both the pre-screen and main study, changes in these characteristics were considered as misrepresentation. If a participant reported their age as anything that was not possible, given their previous responses on the prescreen (e.g. if a participant reported a younger age on the main survey, or an age 2 years or greater than the prescreen) they were not included in the main study analyses,  $N = 20$ . Additionally, any participants that reported anything different from full hiring authority in the main study ( $N = 168$ , 110 from full to partial hiring authority [i.e., involvement in hiring decisions], and 58 from full to no hiring authority), were excluded from any future analyses. It is important to note that there was some overlap between exclusion criteria. For example, an individual may have been inaccurate in reported age and also changed from full to no hiring authority.

The final sample for the main study consisted of 379 people with full hiring authority, i.e., “hirers” (46% women, 56% men, .5% non-binary, 88% White, 5% Black/African American, 5% Hispanic/Latino/South Americans, 3% East Asian, 1.8% Native American, .8% Middle Eastern, .5% South Asian. 1.1% a non-listed ethnicity, 96% born in the United States, 3.4% immigrant, and .3% refugee, and .5% a non-listed status). Given the discrepancy between the

ideal sample size based on power analysis ( $N = 434$ ) and achieved sample size ( $N = 379$ ), a post-hoc power analysis was conducted to assess achieved statistical power. Utilizing the same small-to-medium effect size for linear multiple regression, my achieved power was .92, which is widely considered within the range of acceptable statistical power (Cohen, 1988). After reading the consent information, participants were asked to complete the measures found below. This study was approved by the Conjoint Faculties Research Ethics Board (REB18-0887).

## Measures

The following measures were completed by participants in the following order. Please refer to Appendix B for the complete copy of all measures utilized in this study.

**Demographics.** Age, ethnic background, and newcomer status (e.g. immigrant, refugee, born in the United States, or other) were assessed.

**Refugee Definition.** Hirers' subjective definition of what a refugee is was assessed using a single open-ended question. The item read "What is your definition of a refugee?".

**Social dominance orientation.** Social dominance orientation (SDO) was assessed using a 4-item measure adapted from Pratto et al (2013). A sample item for SDO is "superior groups should dominate inferior groups" (1 [*extremely oppose*] to 7 [*extremely favour*]).

**Intergroup contact.** Intergroup contact with refugees was assessed using measures of contact quantity and quality which were adapted from Islam & Hewstone (1993). Intergroup contact quantity was measured with 4-items. A sample item for intergroup contact quantity is "how much contact have you had with refugees as close friends" (1 [*none at all*] to 7 [*a great deal*] or 8 [*I don't know*]). Intergroup contact quality was measured with 5-items. A sample item for contact quality was "Please use your past interactions with refugees to rate each statement

below”, “Our interaction was pleasant” (*1 [strongly disagree] to 7 [strongly agree]*) or 8 [*I don’t know*].

**Diversity training experience.** A categorical variable capturing past diversity training experience was created from factors shown to be important in diversity training outcomes in a meta-analysis by Kalinoski et al. (2013). First, given that diversity training can be in person or online, participants were asked if they had completed in person diversity training (*yes, no, I don’t know*). Those responding “yes” were then asked about the duration of the program, whether training took place over multiple sessions, who led the training, and how recently the training was completed. This same process was repeated for online diversity training. If participants reported diversity training that had a duration greater than 4 hours, was conducted over multiple spaced out sessions, and was conducted by an internal manager or direct supervisor, they were considered to have more optimal diversity training based on Kalinoski et al. (2013). Scores assigned to participants were based on whether they participated in diversity training, and how many of the optimal conditions that training consisted of. If a hirer participated in online diversity training, they received a point, and an additional point for each optimal condition. If a participant engaged in-person diversity training, they received a point, and an additional point for each optimal condition. The scores for online and in-person diversity training were then summed, as it is expected that having online diversity training in addition to in-person training might be all the more beneficial. A maximum score for diversity training is 8 (both online and in person training, both involving all optimal conditions), and a minimum is 0 (no diversity training)<sup>2</sup>. An open-ended question was also included, asking for hirers to describe the diversity training they engaged in. This was used in a check whereby those describing training that was clearly not diversity training as I operationalized it (e.g. a participant described a program

focusing on improving employees' "innovative commercial thinking") were coded as not having diversity training.

**Group empathy.** A 6-item measure of empathy toward refugees was adapted from Batson et al (1997). A sample item of this scale is "To what extent do you feel sympathetic toward refugees?" (1 [*not at all*] to 7 [*very*]).

**Intergroup anxiety.** A 15-item scale of intergroup anxiety (Stephan & Stephan, 1985) was used. Hirers indicated how they feel in terms of their interaction with refugees through 15 adjectives: 5 positive (happy, confident, accepted, at ease, certain) and 10 negative (awkward, self-conscious, irritated, suspicious, careful, defensive, apprehensive, worried, and anxious). Each adjective was assessed with a rating scale (1 [*not at all*] to 7 [*very*]).

**General attitudes.** General attitudes toward refugees were measured using an attitude thermometer adapted from Haddock, Zanna, & Esses (1993). Hirers indicate their general attitudes by selecting a temperature interval corresponding to their attitudes toward that group (0-10 degrees to 91-100 degrees) with warmer temperatures indicating more positive attitudes.

**Hiring attitudes toward refugees.** A 6-item measure of hiring attitudes toward refugees was used, with 2 of these items adapted from Lundborg & Skedinger (2014). The remaining items were created by the author. As such, these 6-items were subjected to an Exploratory Factor Analysis (EFA) using a Principle Axis Factor (PAF) extraction was utilized to examine the underlying structure of the measure. All items loaded acceptably on a single factor, with factor loadings ranging between .50 and .88. A sample item of this scale is "I believe in hiring refugees only when they are more qualified than American born applicants" (1 [*strongly disagree*] to 7 [*strongly agree*] or 8 [*N/A*]).

**Hiring intentions.** Hiring intentions were measured with a face-valid single item: “If given the opportunity, to what extent do you intend to hire refugee candidates in the future?” (*1 [strongly intend not to hire] to 7 [strongly intend to hire]*).

**Hiring behaviour.** Hiring behaviour was measured using a single item: “Approximately how many refugees have you hired in the last 5 years” (*1[0] to 7 [7+ refugees] or I don’t know*).

## Results

### Preliminary Analyses and Assumption testing

Unless otherwise specified, for all variables on multi-item scales, mean scores were computed after reverse scoring as required. All of the scales had acceptable alpha reliability, please refer to Table 1 for details.

An analysis was done to assess the amount of missing data existing in the data set. Intergroup contact quantity was missing 3 values (0.8%) ( $N = 376$ ). For intergroup contact quality ( $N = 295$ ), 84 individuals had “missing” values, however an “I don’t know” option was included in this measure and, those individuals choosing “I don’t know” were automatically coded as missing. It was noted that 77 of those without data on contact quality indicated minimum values on contact quantity (i.e., “1- none at all” for all responses). Thus, the lower response rate on this question may have been due to participants feeling that they were unable to assess contact quality, given their minimal contact quantity. These participants likely responded “I don’t know” for contact quality (although it is not possible to assess this for certain). Upon exploring the missing data for hiring attitudes, the question “My experiences employing refugees have been positive” was missing a large amount of data ( $N = 216$ ). This item was identified as being double barreled, and contingent on having hired refugees in the past, and their hiring



attitudes. For this reason, the item was removed from the analysis. Otherwise, there were 7 missing values (1.8%) for contact quality. No missing data were present for empathy ( $N = 379$ ), intergroup anxiety ( $N = 379$ ), attitudes ( $N = 379$ ), or hiring intentions ( $N = 379$ ). Hiring behaviour could only be answered by participants if they reported that their company/organization hired refugees in the last 5 years ( $N = 122$ ). Of these participants, 3 were missing data for hiring behaviour (2.4%) ( $N = 119$ ). Overall, missing data was considered minimal and as such, further analysis was conducted without imputation.

Univariate outliers were then assessed by standardizing all variables, and then assessing whether any cases exceed  $|3|$  standard deviations from the mean. Multivariate outliers were assessed using Mahalanobis distance. The methodology for identifying a multivariate outlier required a threshold value to be determined. This was completed by referencing a chi-square table with degrees of freedom equal to the number of predictors and evaluated at a p-value of .001 (Tabachnick & Fidell, 2012). That threshold was 27.88 for 9 predictors. Any Mahalanobis distance that exceeded that value was deemed a multivariate outlier. The analyses revealed that there were 9 contact quality outliers, 4 optimal diversity outliers, 5 empathy outliers, 3 intergroup anxiety outliers, 5 general attitude outliers, 5 hiring behaviour outliers, and 4 SDO outliers. After overlap was considered, 25 univariate outliers were identified. With the univariate outliers temporarily filtered out to conduct this analysis, two values exceeded this threshold and were deemed multivariate outliers.

I assessed whether outliers represented an error outlier versus potentially interesting outliers (see Leys, Delacre, Mora, Lakens, & Ley, 2019 for further discussion). Error outliers consist of datapoints that may be due errors in recording data, impossible values, or other non-legitimate reasons. Interesting outliers are data that may be different from others in the dataset

and not due to any actual errors but may provide interesting information about a phenomenon (Aguinis, Gottfredson, & Joo, 2013; Cohen et al, 2003). No outliers were deemed error outliers based on visual inspection. Additionally, these outliers largely represent individual hirers with interesting perspectives or experiences (i.e., high on hiring behaviour, or high on SDO). For this reason, the main analyses retained all outliers. However, in the interest of transparency, all analyses were run with ( $N = 379$ ) and without ( $N = 352$ ) the outliers listed above. The vast majority of these results remained the same, with minor differences reported in Appendix C.

Next, univariate normality was examined by assessing the skewness and kurtosis of the variables, see Table 2. Based on the criterion that skewness coefficients less than  $|2|$  indicate normally distributed data (Kim, 2013), all variables were normally distributed. The criterion for kurtosis deviating from normality is  $|7|$  (Kim, 2013; West, Finch, & Curran, 1995); none of the variables exceeded this value. I concluded that the variables were sufficiently normally distributed to proceed with analyses. Multivariate normality was assessed through a visual inspection of P-P and Q-Q plots and their expected normal values versus their observed values. Some deviations from normality were present, but these issues were managed through the use of bootstrapping procedures for mediation and path analysis related hypotheses. Bootstrapped estimates have been shown to be less biased than maximum likelihood estimates with non-normal data (Byrne, 2010).

The linearity of the variables was assessed by visually inspecting the scatterplot matrix of all variables in SPSS. The relationships between these variables appeared to be linear.

I also tested variables for any evidence of heteroscedasticity by exploring a scatterplot of standardized predicted residual values against obtained residual values. Visual inspection provided minimal evidence of minor heteroscedasticity. Violations of homoscedasticity tend not

to have significant effects on significance tests if they are minor (Tabachnick & Fidell, 1996), as such I proceeded with my analyses as planned.

I tested for issues of multicollinearity in two different ways. First, a bivariate correlation matrix was produced (see Table 1), to assess whether any two variables correlated above a value of  $|.85|$ , as this would indicate potential issues of multicollinearity (Kline, 2005). No combination of variables produced a correlation of this size; pairwise multicollinearity did not appear to be present. Two variables, however, empathy and general attitudes did correlate highly ( $r = .80$ ). To further assess any possibility of multicollinearity, variance inflation factor (VIF) and tolerance values were investigated by regressing all of my predictors on hiring behaviour, and assessing their values, see Table 2. Common rules of thumb for identifying issues of multivariate multicollinearity tend to be if a variable's VIF scores exceeds 10 (Mason et al, 1989; Marquardt, 1970) or more conservatively, 5 (Hair, Ringle, & Sarstedt, 2011; Menard, 1995). Given that tolerance scores are the inverse of VIF, those corresponding thresholds are  $.10$ , and  $.20$ , respectively. No variables exceeded these values. It is however recognized that because group empathy toward refugee and general attitudes toward refugees do correlate highly, it is possible that these measures may have some element of redundancy.

### **Refugee definition**

As noted above, hirers were asked for their subjective definition of a refugee. The purpose of including this item was to qualitatively filter out anyone who held critically incorrect definitions of a refugee. Fortunately, all hirers acceptably defined refugees. These definitions largely centered on refugees being individuals that were forced to flee their country due to some sort of threat. The specific threats in these definitions varied, largely mentioning political unrest, war, persecution, or poor living conditions.

## Relations Between Variables

A summary of analyses and results can be found in Table 3. Bivariate correlations are presented in Table 1. As predicted, greater intergroup contact quantity was associated with greater empathy toward refugees, less intergroup anxiety, and more positive general attitudes toward refugees, consistent with H1. Also, as predicted (H2), greater intergroup contact quality was associated with greater group empathy, lower intergroup anxiety, and more positive general attitudes. More optimal diversity training was positively associated with empathy toward refugees and more positive attitudes, but was not significantly associated with intergroup anxiety, partially consistent with H3.

Hypothesis 7 was assessed using linear regression. This hypothesis was supported, with general attitudes very strongly predicting more positive hiring attitudes.  $f^2 = .54$ ,  $F(1, 377) = 206.48$ ,  $p < .001$ .  $b = .43$ ,  $t(376) = 14.37$ ,  $p < .001$ .

Hypothesis 8a was supported. Hiring attitudes significantly predicted hiring intentions,  $f^2 = .56$ ,  $F(1, 377) = 215.11$ ,  $p < .001$ .  $b = .61$ ,  $t(376) = 14.67$ ,  $p < .001$ . Hypothesis 8b was not supported, hiring attitudes did not significantly predict hiring behaviour,  $F(1, 117) = 2.24$ ,  $p = .137$ .

Hypothesis 9 was not supported. Hiring intentions did not significantly predict hiring behaviour,  $F(1, 117) = .68$ ,  $p = .410$ .

Hypothesis 10 was assessed using the Fisher-Z transformation to convert correlation coefficients into z-scores and then conducting a z-test to assess whether they differ significantly. For the outcome variable group empathy, contact quality had a significantly stronger correlation than quantity  $z = -4.33$ ,  $p < .001$ , and diversity training  $z = 5.05$ ,  $p < .001$ . Contact quantity and

diversity training did not differ significantly in terms of correlation magnitude ( $p = .443$ ). Contact quality more strongly correlated (negatively) with intergroup anxiety than contact quantity,  $z = 4.59, p < .001$ . Diversity training was not significantly associated with intergroup anxiety, see Table 1. Contact quality had a significantly stronger correlation with general attitudes toward refugees than contact quantity,  $z = -4.45, p < .001$ , and diversity training  $z = 4.72, p < .001$ . Contact quantity and diversity training did not significantly differ in correlation magnitudes for general attitudes toward refugees ( $p = .780$ ). Contact quality had a significantly stronger magnitude of association with hiring attitudes than contact quantity,  $z = -3.50, p < .001$ . Diversity training did not predict hiring attitudes. Contact quality had a stronger magnitude association with hiring intentions than contact quantity,  $z = -4.05, p < .001$  and diversity training  $z = 5.54, p < .001$ . Contact quantity and optimal diversity training did not significantly differ in their magnitude of association with hiring intentions ( $p = .114$ ). Hiring behaviour was only positively associated with contact quantity. These findings largely support H10, with contact quality having a stronger impact on the variables of interest than diversity training (and contact quantity) in all situations, with the exception of hiring behaviour. Contact quantity solely predicted hiring behaviour but did not differ in association magnitude from diversity training on empathy, general attitudes, or hiring intentions.

Although not explicitly hypothesized, I also investigated the relationships between my variables of interest and the demographics of the hirers, notably age, ethnicity, and gender, see Table 1. Notably, age was negatively associated with lower contact quantity, less intergroup anxiety, but also weaker hiring intentions, and less hiring behaviour. Non-white hirers tended to have greater intergroup contact, and more positive general attitudes toward refugees. Gender was

association with empathy toward refugees, with women have greater empathy, and also more positive hiring attitudes.

### **Mediation testing**

To explore whether empathy and intergroup anxiety played a role in explaining the relationship between intergroup contact quantity, intergroup contact quality, or diversity training and general attitudes toward refugees, mediation analyses were conducted using bootstrapping (10,000 samples), allowing for the estimation of indirect effects. General attitudes toward refugees were used as the criterion variable, and empathy and intergroup anxiety measures were used as simultaneous mediators. Intergroup contact quantity, intergroup contact quality, and diversity training were each separately used as predictors, to examine hypotheses 4-6.

The direct effect of intergroup contact quantity on general attitudes toward refugees became non-significant when adding empathy and intergroup anxiety measures, indicating full mediation, see Figure 2. Indirect effects of contact quantity through empathy and intergroup anxiety were both significant, consistent with H4.

The direct effect of intergroup contact quality on general attitudes toward refugees became non-significant when adding empathy and intergroup anxiety measures, indicating full mediation, see Figure 3. The indirect effects of contact quality through empathy and intergroup anxiety were both significant, this is consistent with H5.

The direct effect of diversity training on general attitudes toward refugees became non-significant when adding empathy and intergroup anxiety measures, indicating full mediation, see Figure 4. However, the indirect effects of diversity training through empathy were significant,

while the effects through intergroup anxiety were non-significant, this is partially consistent with H6.

Hypothesis 11 was tested using path analysis with IBM's AMOS software. When first testing this model, estimating means and intercepts was turned on given that there were missing data. All three predictors were simultaneously tested in the model. The only significant predictor of empathy or intergroup anxiety was intergroup contact quality, partially supporting this hypothesis. Neither contact quantity nor diversity training were significant predictors of intergroup anxiety or empathy in the simultaneous model and were subsequently dropped from this model. Hiring intentions did not significantly predict hiring behaviour, as such, hiring behaviour was also subsequently removed from this model. All other relationships that were predicted were found to be significant, and in the direction hypothesized.

To test the simultaneous model with AMOS for indirect effects, it was necessary to remove missing data for bootstrapping (and turning off estimate means and intercepts). I tested a trimmed model that excluded contact quantity, diversity training, and hiring behaviour, as these factors were not significant predictors when previously exploring the model (with estimate means and intercepts on). Next, to accommodate this analysis, 88 individuals were removed from the dataset ( $N = 291$ ). The reduced sample sized was deemed to be non-problematic, based on recommended rule of thumb for structural equation modelling being 10:1 cases to free parameters (Kline, 2005); the model contained 23 free parameters, indicating a sample size of at least 230 to be sufficient. The data absent from this analysis were mostly from those individuals not having intergroup contact with refugees, and thus not completing the intergroup contact quality measure. I ran the initial model, including all predictors, bootstrapping (10,000 samples), indirect relationships mirrored the above results, with intergroup contact quality being the only

significant predictor of empathy and intergroup anxiety. Subsequently, I removed contact quantity and diversity training from the model. All remaining relationships mediated in the predicted direction, see Figure 5. Intergroup contact quality predicted general attitudes toward refugees through both increased empathy toward refugees and decreased intergroup anxiety. General attitudes predicted hiring attitudes toward refugees, and those hiring attitudes predicted hiring intentions.

### **Moderation testing**

Given that 9 moderation analyses were conducted (RQ 1-3 and exploratory analyses), I used a Bonferroni correction to adjust for inflated family-wise errors rates. I divided my alpha of .05 by 9, meaning only values of .006 or below were viewed as statistically significant for all the moderation analyses below.

For research question 1, I assessed whether SDO moderated the relationship between intergroup contact quantity and general attitudes toward refugees. To test this, an interaction term between contact quantity and SDO was created, general attitudes was regressed on intergroup contact quantity, SDO, and the interaction term. Research question 1 was not supported, as the interaction was found to be non-significant,  $b = .01$ ,  $t(372) = .24$ ,  $p = .813$ . SDO also did not moderate the relationship between intergroup contact quality and general attitudes toward refugees. This was tested by creating an interaction term between contact quality and SDO, and then regressing general attitudes on intergroup contact quality, SDO, and their interaction. This interaction was also found to be non-significant,  $b = -.00$ ,  $t(291) = -.03$ ,  $p = .974$ .

For research question 2, I assessed whether SDO moderated the relationship between diversity training and general attitudes toward refugees. This was tested by creating an



interaction term between diversity training and SDO and then regressing general attitudes on diversity training, SDO and their interaction term. The interaction was found to be non-significant,  $b = -.00$ ,  $t(375) = -.02$ ,  $p = .984$ , thus research question 2 was not supported..

I tested whether SDO moderated the relationships between intergroup contact/diversity training and empathy for research questions 3. First, this was tested by creating an interaction term between contact quantity and SDO, and then regressing empathy on contact quantity, SDO, and the interaction term. The interaction term was found to be non-significant. No evidence of moderated relationship of SDO existed and contact quantity on empathy,  $b = -.01$   $t(372) = -.40$   $p = .694$ . This was tested by creating an interaction term between contact quantity and SDO, and then regressing empathy on contact quantity, SDO, and the interaction term. The interaction term was found to be non-significant. Similarly, no moderated relationship between contact quality and SDO was found for empathy. This was tested by creating an interaction term between contact quality and SDO, and then regressing empathy on contact quality, SDO, and that interaction term. The interaction term was non-significant,  $b = -.01$   $t(291) = -.35$   $p = .725$ . Finally, no moderated relationship between diversity training and SDO existed for empathy. This was tested by creating an interaction term between diversity training and SDO, and then regressing empathy on diversity training, SDO, and their interaction; that interaction term was non-significant,  $b = .02$   $t(375) = .59$   $p = .555$ . Overall, no support for research question 3 was found.

### **Exploratory Moderation Analyses**

Although not formally hypothesized, I chose to explore whether the relationship between intergroup contact quantity, or intergroup contact quality, or diversity training and intergroup anxiety toward refugees was moderated by SDO. First, I created an interaction term between

contact quantity and SDO. I then regressed intergroup anxiety on contact quantity, SDO, and the interaction term. These variables explained a significant amount of variance in intergroup anxiety,  $f^2 = .26$ ,  $F(3, 372) = 32.19$ ,  $p < .001$ . Additionally, a significant interaction between contact quantity and SDO was found,  $b = .09$ ,  $t(372) = 3.89$ ,  $p < .001$ . I explored the conditional effects of the relationship between contact quantity and intergroup anxiety at low, medium, and high levels of SDO (1 SD below mean, mean, and 1 SD above mean). The relationships were significant at low and medium levels of SDO, with contact quantity predicting lower ingroup anxiety more strongly for lower SDO individuals, see Table 4 for values and Figure 6 for a visualization.

Second, I created an interaction term between contact quality and SDO, and then intergroup anxiety was regressed on contact quality, SDO, and the interaction term. These variables accounted for a significant amount of variance in intergroup anxiety,  $f^2 = .47$ ,  $F(3, 291) = 45.88$ ,  $p < .001$ . A significant interaction term was found,  $b = .07$ ,  $t(291) = 2.80$ ,  $p = .005$ . Next, I explored the conditional effects of the relationship between contact quality and intergroup anxiety at low, medium, and high levels of SDO. Conditional effects were significant at all levels of the moderator, but indicate a magnitude effects. While greater contact quality appears to predict reduced intergroup anxiety, its effects are most pronounced for those lower in SDO, see Table 5 for values, and Figure 7 for a visualization.

Last, I explored whether the relationship between diversity training and intergroup anxiety was moderated by SDO. I tested this by creating an interaction term between diversity training and SDO, and then regressing intergroup anxiety on diversity training, SDO, and the interaction term. That interaction was non-significant,  $b = .02$ ,  $t(375) = .60$ ,  $p = .546$ .

### Other Supplementary Analyses

In the interest of exploration, hiring behaviour was also conceptualized dichotomously, without the inclusion of the qualifying questions “Has your company/organization hired any refugees in the past 5 years?” Instead, hirers were coded based on whether they had personally hired a refugee in the past 5 year or not. This allowed for a larger, unrestricted sample ( $N = 379$ ). A number of interesting results can be found when conceptualizing hiring behaviour this way. Positive associations between contact quantity/quality, diversity training, and hiring behaviour emerge, as well as a positive association between hiring intentions and hiring behaviours, see Table 6 for details. When exploring the relationships between variables simultaneously with path analysis, a similar pattern of relationships to earlier conceptualization, with contact quality remaining as the only significant predictor, but the link between intentions and behaviour now exists, see Figure 8. The indirect effects of contact quality on hiring behaviour now exist, but are modest,  $f^2 = .04$ .

### Results summary

Overall, contact quantity and quality were both positively associated with more empathy, and more positive attitudes toward refugees, and less intergroup anxiety. Diversity training was also positively associated with empathy and general attitudes toward refugees but was unassociated with intergroup anxiety. Empathy was shown to mediate the relationship between all three predictors (contact quantity, contact quality, and diversity training) and general attitudes toward refugees. That is, all three predictors were associated with increased empathy, and in turn, more positive general attitudes toward refugees. Intergroup anxiety also emerged as a mediator of the relationship between intergroup contact quantity or quality and general attitudes toward refugees, with greater contact being associated with decreased intergroup anxiety toward

refugees, which was associated with more positive general attitudes. Together, empathy and intergroup anxiety fully mediated the relationships between intergroup contact quantity/quality and general attitudes toward refugees. Diversity training and intergroup anxiety were not associated with each other, but empathy fully mediated the relationship between diversity training and general attitudes.

When tested simultaneously, intergroup contact quality emerged as the only significant predictor of empathy and intergroup anxiety. General attitudes toward refugees strongly predicted hirers' hiring attitudes toward this group, and in turn strongly predicted their hiring intentions. These findings were confirmed both individually, through univariate regressions, and simultaneously, through path analysis. I did not find support for a relationship between hiring intentions and hiring behaviour. The only predictor of hiring behaviour was contact quantity, this relationship will be discussed in subsequent sections. SDO was associated with decreased empathy, increased intergroup anxiety, more negative general attitudes, more negative hiring attitudes, and negative hiring intentions, and marginally associated with greater hiring behaviour ( $p = .051$ ). SDO was not found to moderate the relationships between any of the three predictors and general attitudes or empathy, as predicted. Alternatively, exploratory analyses suggest that SDO moderates the relationship between contact quantity, and quality, and intergroup anxiety, with greater contact quantities and quality being less effective at reducing intergroup anxiety among these hirers. Finally, when exploring hiring behaviour dichotomously, the relationship between hiring intentions and hiring behaviour was positive, and significant. This relationship also held together in the simultaneous path analysis.

## Discussion

This is the first study I am aware of that examines the impact of contact and diversity training on hiring attitudes, intentions, and behaviour toward refugees. It is important to consider how these factors may influence hirers' feelings and decisions towards this group. This study provides a thorough and effective use of a crowdsourced platform, MTurk. The two-step recruiting methodology I used is integral to reducing misrepresentation (Wessling, et al, 2017), and improving participant quality. Misrepresentation among participants using crowdsourced platforms has been identified as a serious threat to the ecological validity (Siegel & Navarro, 2019). The threat is particularly high when seeking a population that is relatively rare (Chandler & Paolacci, 2017), like those with hiring authority. By utilizing this methodology, I have taken the necessary steps to obtain my sample of interest and I can be confident that I have significantly reduced participant misrepresentation. This heightens confidence in drawing conclusions about the population of interest, those with authority to make hiring decisions.

In the context of contact and hiring, my findings complement the limited literature on the effects of intergroup contact on hiring social outgroups. This study represents, to my knowledge, the first investigation of the role of intergroup contact on refugee hiring. In fact, only one study of which I am aware has directly examined associations between intergroup contact and hiring intentions toward disadvantaged groups. Fasbender and Wang (2017) found that higher quality intergenerational contact between older and younger workers resulted in greater hiring intentions toward older workers. Additional research has found that organizations that had a record of previously hiring disabled individuals were associated with hiring managers having greater hiring intentions toward disabled individuals (Araten-Bergman, 2016). Although this study did not examine intergroup contact specifically, intergroup contact at work likely occurred and may

explain the hiring managers' more positive hiring intentions. Consistent with these two studies, I found that hirers who had more contact with refugees, particularly more high-quality contact, had more positive hiring attitudes, and hiring intentions toward refugees.

Findings from my study also complement work that has indicated that diversity training may have implications for the employment of disadvantaged social groups. This study also represents a first foray into how diversity training is related to hiring attitudes, intentions, and behaviours toward refugees. This is an important area of study, given the paucity of thorough research on the outcomes of diversity training (Paluck & Green, 2009), until very recently. In one recent, and the above-mentioned study, Araten-Bergman (2016) found that human resource managers who had engaged in diversity training targeting disabled individuals had more positive hiring intentions toward this group. There is also evidence that diversity training focused on one target group may also improve attitudes toward groups not explicitly targeted in the training. In one study, it was found that varying the target of diversity training (sexual minorities versus race) can have similar positive effects regardless of target (e.g., diversity training targeting sexual minorities also improved supportive behaviours toward ethnic minorities), (Lindsey et al, 2015). This complements my own findings. Although hirers in my study were not asked about whether the diversity training they participated in was targeted toward a specific group, it is unlikely that many specifically targeted refugees. Most diversity training programs are relatively broad, aiming to improve global attitudes toward diversity generally. These programs also sometimes aim to improve attitudes toward specific social groups, however these effects have been less consistent (Kulik & Roberson, 2008). Nonetheless, diversity training was associated with more positive attitudes toward refugees in my study.

When comparing the strength of relationships with outcome variables among intergroup contact quantity, quality, and diversity training, quality of contact appears to be the most important factor. Although both intergroup contact quantity and quality were largely associated with the same factors in the same direction, the magnitude of these associations was greater for contact quality than contact quantity in almost all situations. Intergroup contact quality appears to outweigh both contact quantity and diversity training when looking at all three predictors simultaneously. This demonstrates the importance of not only having intergroup contact, but ensuring that the contact is positive. This finding supports literature suggesting that contact quality may more strongly determine intergroup bias than contact quantity alone (e.g., MacInnis & Page-Gould, 2015). This finding is particularly important given that negative contact has been shown to be associated with greater prejudice and discrimination. Specifically, it has been found that increased contact quantity can result in greater prejudice toward minority groups (such as Black Australians) when that contact is negative. Additionally, negative contact has been shown to be a stronger predictor of attitudes toward racial groups than positive contact (Barlow et al, 2012). When comparing the strength of associations between contact quantity/diversity training and empathy, general attitudes, and hiring intentions, no differences emerged. This suggests that neither diversity training nor intergroup contact quantity alone can be shown to be more effective than the other on these outcome measures.

Together, empathy and intergroup anxiety fully mediated the relationships between intergroup contact (quantity/quality) and attitudes toward refugees. These findings are consistent with the meta-analytical findings by Pettigrew and Tropp (2008), which indicate that these two factors are the strongest explanatory factors for why intergroup contact improves attitudes toward outgroups. It appears very likely that intergroup contact, particularly high-quality contact,

will result in hirers feeling more empathetic, sympathetic, and/or compassionate toward refugees. Hirers likely become empathetic through taking the perspective of a refugee, a concept highly related to empathy (Pettigrew & Tropp, 2008; Batson et al, 1997b). Similar to intergroup contact, engaging in more optimal diversity training was associated with greater empathy, more positive general attitudes, and greater hiring intentions toward refugees. This is not surprising, given conceptual similarities between diversity training and intergroup contact, notably, the goal of diversity training is to increase positive or decrease negative intergroup behaviour (Pendry et al, 2007). Similar to negative effects of poor intergroup contact quality, some literature suggests that poorly designed diversity training programs can also result in greater prejudice toward outgroups (Legault, Gutsell, & Inzlicht, 2011).

Also of note, the effects of diversity training on attitudes, in this study, were fully mediated by empathy, but intergroup anxiety did not play a role. It appears that intergroup anxiety may be best diminished through in-person contact with outgroups rather than through diversity training. The link between intergroup contact and intergroup anxiety has been well established, notably, that greater intergroup contact tends to reduce both self reported anxiety (Voci & Hewstone, 2003), and physiological threat (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001). Most notably, it appears that contact quality is the most important factor when comparing against contact quantity or diversity training, and this factor was mediated by both reductions in intergroup anxiety and increases in empathy.

### **Hiring intentions and hiring behaviour**

Counter to predictions and based on the theory of planned behaviour (Azjen, 1991), hiring intentions did not predict actual hiring behaviour. Interestingly, this finding is consistent with the findings of Araten-Bergman (2016), who found that among hiring managers, attitudes



(along with other factors, such as social norms, and organizational policies) predicted hiring intentions toward disabled individuals, but hiring intentions did not predict behaviour. However, Araten-Bergman (2016) found that either having a company policy supporting the hiring of disabled individuals or having a disability training program did predict behaviour. It would appear that social norms, policies, or specific training in some situations, or for certain social groups, may dictate hiring decisions more strongly than attitudes toward a social group or intentions of hiring that group, and is consistent with the theory of planned behaviour. That is, even those with negative attitudes toward a group or intentions not to hire a group may hire members of that group when social norms or policies dictate that they should. Araten-Bergman also suggests that implicit perceptions may trigger behaviours inconsistent with explicit attitudes or hiring intentions. In the context of refugees, a hirer may espouse positive explicit hiring attitudes and intentions toward refugees, but when faced with actual hiring situations, particularly if that interaction is live, unconscious biases based on stereotypes, fear, or anxiety, may result in decreased hiring behaviour.

Additional explanations for the incongruence between intentions and behaviours may surround issues of social desirability, or measurement concerns. Social desirability may play a role in the responses given around hiring intentions (and attitudes) toward refugees. Hirers in our study may have reported more positive attitudes toward hiring refugees than their actual feelings, perhaps to appear non-prejudicial to the researcher. Similarly, intentions to hire refugees may have also been over reported. Negative stigma exists against being seen as prejudicial or discriminatory toward disadvantaged social groups (Plant & Devine, 1998). The mismatch between intentions and behaviours may also be due to an issue of temporality. In this study, I measured future intentions to hire refugees, but measured past hiring behaviour. It is possible

that hirers may not have hired refugees in the past, but plan to in the future. It is also possible that hirers may have hired refugees in the past, but did not intend to, or do not intend to in the future. Further, only a relatively small subset of hirers ( $N = 119$ ) in this study reported experience hiring refugees; it is possible that the relationships may differ with a larger sample. This explanation is bolstered by exploratory analyses with hiring behaviour explored in a dichotomous fashion. This allowed for a greater sample size ( $N = 379$ ), and resulted in positive associations with contact quantity, contact quality, diversity training, and hiring intentions. In fact, the link between hiring intentions and hiring behaviour does hold up, albeit its effects were quite small. These results, however, are consistent with the theory of planned behaviour, and provide optimism for future investigations.

Another alternative explanation for these findings also emerged from other analyses conducted using this dataset<sup>1</sup> (Boss & MacInnis, under review). In this study, we found that hiring behaviour was positively related to endorsement of exploitation of refugees. That is, those more supportive of exploiting refugees reported having hired more refugees. We also found that hirers higher in SDO or lower in honesty-humility, a personality trait from the HEXACO personality inventory characterized by being insincere, unfair, greedy, and lacking in empathy (Ashton & Lee, 2005) also reported greater hiring behaviour toward refugees. Individuals that were high on SDO, and/or low on honesty-humility tended to have negative hiring intentions toward hiring refugees, but also had increased hiring behaviour. Based on these results, it might be that those hirers who feel positively toward refugees wish to hire refugees in the future, whereas a subset of individuals with less positive feelings toward refugees and darker motives have actually doing more of the hiring of refugees. More research is needed to further examine these relationships.

### **Role of Social Dominance Orientation**

Another aim of this project was to assess how SDO was associated with my variables of interest. It was found that SDO was negatively associated with empathy, general attitudes, hiring attitudes, and hiring intentions toward refugees. Similarly, SDO was positively associated with intergroup anxiety. These associations fit with the current literature on this socio-political attitude. Those that are higher in SDO tend to prefer group hierarchies, and dominance of social groups they deem to be inferior (Pratto et al, 1994; Sidanius et al, 2004). Although it was hypothesized that SDO may moderate the relationships between intergroup contact/diversity training and general attitudes, or empathy, this was not supported. It appears that intergroup contact and diversity training may improve hirers' empathy, and general attitudes toward refugees regardless of the hirers' level of SDO. Although inconsistent with literature demonstrating that contact "works" best for those higher in SDO (Dhont & Van Hiel, 2009; Hodson, 2008; Hodson et al, 2013), these findings are still promising, suggesting that regardless of a hirers' levels of SDO (i.e., even at higher SDO), intergroup contact and diversity training may improve their attitudes toward refugees through increased empathy toward the group.

When exploring the impact of SDO on the relationship between intergroup contact/diversity training and intergroup anxiety, the findings are inconsistent with previous literature suggesting those higher in SDO may benefit the most from intergroup contact (Dhont & Van Hiel, 2009; Hodson, et al, 2013). In this study, it appears that contact worked best in terms of reducing intergroup anxiety for those hirers moderate to low on SDO. Specifically, these hirers appear to benefit from reductions in intergroup anxiety that may accompany more frequent contact with refugees. Further, it appears that higher SDO hirers also benefit less from better quality contact with refugees. In this situation, it appears that hirers endorsing more social

dominance may benefit less from contact, falling more in-line with the findings of Asbrock and colleagues (2012). Although not as successful in high SDO individual, intergroup contact of positive quality with refugees was still associated with more positive evaluations of refugees.

### **Limitations and Future Directions**

This study, like all studies, has limitations. To begin, the most notable limitation is that this study is correlational in design. As such, I cannot draw causal conclusions. I am able to provide useful information about the associations between these variables of interest, but cannot be certain of direction of these associations. Second, only a relatively small subset of the hirers ( $N = 119$ ) reported hiring refugees in the past. Future research should seek to explore the impact of intergroup contact and diversity training on hiring experimentally. This type of methodology would allow for stronger conclusions surrounding the causality of contact interventions or diversity training and provide a stronger assessment of temporal relationships between the variables. That being said, I did rely on well-established theory, notably the theory of planned behaviour and intergroup contact, to temporally position my variables in a manner that I believe may be consistent with causality. It would be also be ideal to investigate the associations between these variables among a sample of hirers with greater experience hiring refugees.

Another limitation was, to my knowledge, no established measure assessing hiring attitudes toward refugees in existence. As such, I created a measure. The items were face valid, had good reliability, and loaded on a single factor, however, further testing and refinement would be optimal. Ideally, it would be best to develop a measure of hiring attitudes using best practices for scale development. Following the recommendations of Hinkin (1998), I will briefly outline a more ideal sequence for measure development. First, item generation using a deductive approach would be ideal, followed by a content validity assessment. Once a number of items are created,

this early version of the questionnaire could be administered to those with hiring authority to confirm content validity. Next, data could be collected to evaluate the factor structure of the measure, which could be evaluated with an exploratory factor analysis. This factor analysis could be used for item and scale refinement and assessing that factor structure; at this stage internal consistency could be evaluated to determine the reliability of the measure. After collecting additional data, a confirmatory factor analysis could be conducted to assess the goodness of fit of the measurement model, and evaluate the fit of the individual items within the model.

Convergent and divergent validity between the new scale and existing measures could then be assessed to ensure that the measure is associated with similar measures (but not too similar) and is not associated with dissimilar measures. Finally, it would be important to replicate the finding of the measure anytime items are added or removed, which should include confirmatory factor analysis, testing internal consistency, and convergent/divergent validity. Future development of a measure of hiring attitudes should attempt to follow these steps laid out by Hinkin.

An additional limitation of this study relates to my means of assessing diversity training. When assessing diversity training, I included several factors that have been demonstrated to make diversity training impactful, including duration of training, who led the training, and how distributed over time the sessions were. In the interest of survey length, I only included these factors, as they have been shown to be important in diversity training effectiveness. Specifically, I selected these factors because they appear to have some of the largest effects on affective and cognitive diversity outcomes based on meta-analytic findings (Kalinowski et al, 2013). That being said, it is possible that the inclusion of additional factors such as whether training was voluntary or mandatory or whether training focused on differences or similarities between individuals may impact the efficaciousness of diversity training and provide an even clearer picture of what

optimal diversity training for improving hiring attitudes/behaviour toward refugees should look like. In the interest of improving hiring outcomes for refugees, it would also be valuable to explore the effectiveness of diversity training interventions that were specifically tailored to refugees (versus more general training surrounding ethnicity, gender, or sexual minorities), despite the limited literature that suggest that the effects of diversity training may be generalizable to multiple groups (Lindsey et al, 2015). It could also be useful to assess more specific mediums of diversity training, for instance, one could explore the effectiveness of watching a video versus a lecture style training program.

Whereas it appears that diversity training may have positive effects on empathy, it is important to acknowledge another limitation of this study. It is possible that one may conflate the effectiveness of diversity training programs with predispositions to support diversity (Paluck & Green, 2009). Those hirers that scored higher on diversity training programs may have been more willing to engage in diversity training from the beginning, if the program was voluntary. If these individuals are more willing to engage in diversity programming, it is possible, if not probable, that they already have more positive attitudes toward refugees. As mentioned above, experimental designs will be necessary to sufficiently assess the causality and directionality of these associations. Additionally, although it appears that intergroup contact (and to some extent, diversity training) improve hiring attitudes and hiring intentions, this study did not include a frame of reference to compare hiring decisions of refugee against locally born individuals. It is possible that even with positive and frequent intergroup contact, that refugees may still be seen as less desirable job candidates than non-refugee groups.

It would be valuable to test whether and how diversity training improves the empathy and hiring attitudes toward other vulnerable or disadvantaged social groups. It is possible that

diversity training may work better for certain groups than others. Given the limited research that diversity training may generalize to various social groups, and the extensive literature on the effects of intergroup contact (albeit largely focused on race and ethnicity), it may be that my findings may generalize to other disadvantaged groups, such as immigrants. Nonetheless, it is possible that the effects found here may not generalize. Refugees as a whole are widely recognized for their vulnerable social status, fleeing from life threatening persecution, and thus may be recognized as a particularly easy group to feel empathy for, in comparison to other disadvantaged groups. In the same vein, refugees come from extremely variables backgrounds, and often are very different from each other. These individuals have a number of different characteristics by which hirers may have judgments or maintain attitudes. A refugee may experience stigma or prejudice due to their ethnicity, skin colour, accent, language, religion, or immigration status. Future research can assess whether intergroup contact or diversity training impact these factors differentially.

Other future research should investigate whether engaging in diversity training has a meaningful impact on actual intergroup contact with that social group. It may be useful to explore whether diversity training might act as a first step toward making actual contact with refugees. Perhaps building empathy toward a disadvantaged group through engaging in diversity training may lead one to engage with these individuals in their work or personal life. Unfortunately, this study suggests that diversity training may not be effective at decreasing intergroup anxiety; a key factor in engaging in intergroup contact to begin with (MacInnis & Page-Gould, 2015). Modest increases in empathy toward refugees after engaging in diversity training alone may be insufficient to spur actual intergroup contact. Regardless, it may be useful

to assess whether engaging in diversity training and intergroup contact concurrently produce any positive additive effects on attitudes toward refugees.

Throughout this study I investigated factors that impacted the hiring of refugees from an individual level, which is valuable, but it requires acknowledgements that individuals exist in a much broader context. This is consistent with the theory of planned behaviour (Ajzen, 1991), which suggests that attitudes, subjective norms, and perceived behaviour control may impact behavioural intentions. It would be of value to explore the interactive effects between higher level contexts, such as organizational culture, and individual level constructs. For example, organizational cultures that strongly admonish prejudicial attitudes or discriminatory behaviours in hiring may have an impact on how efficacious intergroup contact or diversity training is for an individual, this would be consistent with the subjective norms portion of the theory of planned behaviour. Perhaps a hiring manager who holds negative attitudes toward refugee job candidates due to being higher in SDO, or having a history of poor contact with refugees, may still have positive hiring intentions and behaviours toward refugees if they exist within an organizational culture that supports diversity or hiring disadvantaged groups. Research has indicated that policies that promote the hiring of disadvantaged groups can have positive impacts on hiring (Araten-Bergman, 2016). Similarly, a hirer may have extensive diversity training, and a history of positive contact with refugees, and hold positive attitudes toward hiring refugees, but if they work within an organization with social norms against hiring refugees, their hiring behaviour may not align with their attitudes. If strong subjective organizational norms exist, this may impact hirers' perceived behaviour control toward hiring refugees. If norms exist against hiring refugees, a hirer may not believe they have the ability to hire refugees, thus impact hiring intentions and behaviours. Additionally, should hirers perceive few refugees apply for certain



jobs, in certain sectors, or for certain organizations, a hirer may feel they do not have an opportunity to hire refugees. This chain of events may result in lower behaviour intentions toward refugees. Alternatively, should few refugees objectively apply for positions within an organization, hiring behaviour may be suppressed due to lack of opportunity. These are all important factors that can be considered in future research.

Finally, although I was able to explore contact and diversity training among a population of individuals with final hiring authority, it would be valuable to explore then phenomena with a sample of individuals within a single organization. It would be particularly ideal if such a research project could be positioned within an organization with a strong record of hiring refugees.

### **Conclusions**

Overall, this study informs us that intergroup contact and diversity training may have a positive impact on attitudes toward hiring refugees. This is a critically important first step, as the attitudes of those making final hiring decisions toward refugees likely play an important role in who becomes successfully employed. Important next steps will be to investigate how these hiring attitudes and intentions translate into actual hiring behaviour, particularly for who and in what context. This investigation is necessary to better understand how having positive quality interactions between hirers and refugees may eventually help improve employment outcomes for refugees. Although my findings indicate that hirers higher in SDO may be somewhat resistant to the benefits of intergroup contact on reductions of intergroup anxiety, contact still appears to be an effective means to reduce prejudice toward refugees.

I contribute to the literature on the impact intergroup contact on hiring attitudes, intentions, and behaviour toward disadvantaged groups, and is the first, to my knowledge, focusing on refugees. Additionally, I provide preliminary evidence that diversity training may has a positive impact on attitudes toward refugees, albeit having weaker effects than intergroup contact. By comparing the strength of the relationships between intergroup contact quantity, intergroup contact quality, and diversity training on hiring attitudes, intentions, and behaviours toward refugees, I contribute to the intergroup contact literature and the growing evidence that intergroup quality is key to understanding who will benefit from contact with outgroups (MacInnis & Page-Gould, 2015; Barlow et al, 2012). In the aim of improving employment outcomes of refugees, future research and interventions can focus on promoting positive quality contact between hirers and refugees.

## References

- Aguinis, H., Gottfredson, R.-K., & Joo, H. (2013). Best-practice recommendations for defining, identifying, and handling outliers. *Organizational Research Methods*, 16(2), 270–301.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Allport, G.W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley
- Araten-Bergman, T. (2016). Managers' hiring intentions and the actual hiring of qualified workers with disabilities. *The International Journal of Human Resource Management*, 27(14), 1510–1530.
- Armitage, C.J. & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471–499.
- Asbrock, F., Christ, O., Duckitt, J., & Sibley, C. G. (2012). Differential effects of intergroup contact for authoritarians and social dominators: A dual process model perspective. *Personality and Social Psychology Bulletin*, 38(4), 477–490.
- Ashton, M. C., & Lee, K. (2008). The HEXACO model of personality structure and the importance of the H factor. *Social and Personality Psychology Compass*, 2(5), 1952–1962.
- Austin, C. & Este, D., (2001). The working experiences of underemployed immigrant and refugee men. *Canadian Social Work Review*, 18(2), 213–229.
- Bäckström, M., & Björklund, F. (2004). Structural modeling of generalized prejudice: The role of social dominance, authoritarianism, and empathy. *Journal of Individual Differences*, 28(1), 10–17.
- Barlow, F. K., Paolini, S., Pedersen, A., Hornsey, M., Radke, H. R. M., Harwood, J., ... Sibley, C. G. (2012). The contact caveat: Negative contact predicts increased prejudice more than positive contact predicts reduced prejudice. *Personality and Social Psychology Bulletin*, 38, 1629–1643.
- Batson, C. D., Early, S., & Salvarani, G. (1997). Perspective taking: Imagining how another feels versus imagining how you would feel. *Personality and Social Psychology Bulletin*, 23, 751–758.
- Batson, C.D., Polycarpou, M.P., Harmon-Jones, E., Imhoff, H.J., Mitchener, E.C., Bednar, L.L., ... Highberger, L. (1997). Empathy and attitudes: Can feeling for a member of a stigmatized group improve feelings toward the group? *Journal of Personality and Social Psychology*, 72(1), 105–118.
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American economic review*, 94(4), 991–1013

- Bezrukova, K., Spell, C.S., Perry, J.L., & Jehn, K.A. (2016). A meta-analytical integration of over 40 years of research on diversity training evaluation. *Psychological Bulletin*, 142(11), 1227-1274.
- Blascovich, J., Mendes, W. B., Hunter, S. B., Lickel, B., & Kowai-Bell, N. (2001). Perceiver threat in social interactions with stigmatized others. *Journal of Personality and Social Psychology*, 80, 253–267.
- Boss, H.C.D. & MacInnis, C.C. (Under Review). “They owe it to us” Certain hirers are more supportive of exploiting refugee employees and may target them directly for exploitation. Submitted to *Human Resource Management Journal*, May 2, 2019.
- Byrne, B. M. (2010). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. New York: Routledge.
- Capps, R., & Newland, K., Fratzke, S., Groves, S., Auclair, G., Fix, M., & McHugh, M. (2015). *The integration outcomes of US refugees: Successes and challenges*. Migration Policy Institute.
- Chandler, J. & Paolacci, G. (2017). Lie for a dime: When most prescreening responses are honest but most study participants are imposters. *Society Psychological and Personality Science*, 8(5), 500-508.
- Cohrs, J.C., & Stelzl, M. (2010). How ideological attitudes predict host society members’ attitudes toward immigrants: Exploring cross-national differences. *Journal of Social Issues*, 66(4), 673-694.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple correlation/regression analysis for the behavioral sciences*. Hillsdale, NJ: Lawrence Earlbaum Associates.
- Department of State, Bureau of Population, Refugees, and Migration (2018). *Summary of Refugee Admissions as of 30-June 2018* [Data file]. Retrieved from <http://www.wrapsnet.org/admissions-and-arrivals/>
- Derous, E., Buijsrogge, A., Roulin, N., & Duyck, W. (2016). Why your stigma isn’t hired: A dual-process framework of interview bias. *Human Resource Management Review*, 26, 90-111.
- Dhont, K., & Van Hiel, A. (2009). We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians. *Personality and Individual Differences*, 46(2), 172-177.
- Duckitt, J. (2005). Personality and prejudice. In J. Dovidio, P. Glick, & L. Rudman (Eds.), *On the nature of prejudice: Fifty years after Allport* (pp. 395–412). Cambridge, MA: Blackwell.

- Duckitt, J., & Sibley, C. G. (2010). Personality, ideology, prejudice, and politics: A dual-process motivational model. *Journal of Personality*, 78, 1861-1894..
- Drolet, J., Enns, R., Kreitzer, L., Shankar, J., & McLaughlin, A.M. (2017). Supporting the resettlement of a Syrian family in Canada: The social work resettlement practice experience of Social Justice Matters. *International Social Work*, 1-7.
- Erera, P. I. (1997). Empathy training for helping professionals: Model and evaluation. *Journal of Social Work Education*, 33, 245–260.
- Ertz, M., Karakas, F., & Sarigöllü, E. (2016). Exploring pro-environmental behaviors of consumers: An analysis of contextual factors, attitude, and behaviors. *Journal of Business Research*, 69(10), 3971-3980.
- Esen, E. (2005). *Workplace Diversity Practices Survey Report*. Alexandria, VA: Society for Human Resource Management.
- Fasbender, U., & Wang, M. (2017a) Intergenerational contact and hiring decisions about older workers. *Journal of Managerial Psychology*, 32(3), 210-224.
- Fasbender, U. & Wang, M. (2017b). Negative attitudes toward older workers and hiring decisions: Testing the moderating role of decision markers' core self-evaluations. *Frontiers in Psychology*, 7, 1-10.
- FitzGerald, D.S., & Arar, R. (2018). The sociology of refugee migration. *Annual Review of Sociology*, 44(1), 387-406.
- Fowler, S. M., (2005). Training across cultures: What intercultural trainers bring to diversity training. *International Journal of Intercultural Relations*, 30. 401-411.
- Goodman, J.K., Cryder, C.E. & Cheema, A. (2013). Data collection in a flat world: The strengths and weaknesses of mechanical turk samples. *Journal of Behavioral Decision Making*, 26 (3), 213–24.
- Haddock, G., Zanna, M.P., Esses, V.M. (1993). Assessing the structure of prejudicial attitudes: The case of attitudes toward homosexuals. *Journal of Personality and Social Psychology*, 65(6), 1105-1118.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing theory and Practice*, 19(2), 139-152.
- Hayes, T.L., & Macan, T.H. (1997). Comparison of the factors influencing interviewer hiring decisions for applicants with and those without disabilities. *Journal of Business and Psychology*, 11, 357–371.
- Hodson, G., MacInnis, C. C., & Costello, K. (2013). (Over) valuing “humanness” as an aggravator of intergroup prejudices and discrimination. In *Humanness and dehumanization* (pp. 94-118). Psychology Press.

- Hodson, G. (2008). Interracial prison contact: The pros for (socially dominant) cons. *British Journal of Social Psychology*, 47(2), 325-351.
- Hoye, B (2017, December 29<sup>th</sup>) "I applied for over 100 jobs": Refugees struggle to find employment in Manitoba. *CBC*. Retrieved from <https://www.cbc.ca/news/canada/manitoba/manitoba-refugees-jobs-employment-1.4466519>
- Immigration and Citizenship Canada (2019). *Types of work permits for your situation*. Retrieved from [http://www.cic.gc.ca/english/work/apply-who-permit-result.asp?q1\\_options=1i&q2\\_options=2h](http://www.cic.gc.ca/english/work/apply-who-permit-result.asp?q1_options=1i&q2_options=2h)
- Islam, M.R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin*, 19(6), 700-710.
- Jackson, S., & Bauder, H. (2014). Neither temporary, nor permanent: The precarious employment experiences of refugee claimants in Canada. 27(3). 360-381
- Johnson, R. T., & Johnson, D. W. (1981). Building friendships between handicapped and nonhandicapped students: Effects of cooperative and individualistic instruction. *American Educational Research Journal*, 18(4), 415–423.
- Kalinoski, Z.T., Steele-Johnson, D., Peyton, E.J., Leas, K.A., Steinke, J., & Bowling, N.A. (2013). A meta-analytic evaluation of diversity outcomes. *Journal of Organizational Behavior*, 34, 1076-1104.
- Kim, H. Y. (2013). Statistical notes for clinical researchers: assessing normal distribution using skewness and kurtosis. *Restorative dentistry & endodontics*, 38(1), 52-54.
- Kline, R.B. (2005), *Principles and Practice of Structural Equation Modeling* (2nd Edition ed.). New York: The Guilford Press.
- Krahn, H., Derwing, T., Mulder., M., & Wilkinson, L. (2000). Education and underemployed: Refugee integration into the Canadian labour market. *Journal of International Migration and Integration*, 1, 59-84.
- Kulik, C.T., & Roberson, L. (2008). Common goals and golden opportunities: Evaluations of diversity education in academic and organizational settings. *Academy of Management Learning and Education*, 7(3), 309-331.
- Lee. K., & Ashton, M.C. (2005). Psychopathy, machiavellianism, and narcissism in the Five-Factor Model and the HEXACO model of personality structure. *Personality and Individual Differences*, 38(7), 1571-1582.
- Legault, L., Gutsell, J. N., & Inzlicht, M. (2011). Ironic effects of antiprejudice messages: How motivational interventions can reduce (but also increase) prejudice. *Psychological Science*, 22(12), 1472-1477.

- Levashina, J., Hartwell, C.J., Morgeson, F.P., & Campion, M.A. (2014). The structured employment interview: Narrative and quantitative review of the research literature. *Personnel Psychology*, 67, 241-293.
- Leys, C., Delacre, M., Mora, Y. L., Lakens, D., & Ley, C. (2019). How to classify, detect, and manage univariate and multivariate outliers, with emphasis on pre-registration. *International Review of Social Psychology*, 32(1), 5.
- Lindsey, A., King, E., Hebl, M., & Levine, N. (2015). The impact of method, motivation, and empathy on diversity training effectiveness. *Journal of Business Psychology*, 30, 605-617.
- Litman, L., Robinson, J., and Abberbock, T. (2017). TurkPrime.com: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behavior Research Methods*, 49(2), 433-442.
- Lundborg, P., & Skedinger, P. (2014). Employer attitudes towards refugee immigrants. *IFN Working Paper No. 1025*.
- MacInnis, C. C., & Hodson, G. (2019). Extending the benefits of intergroup contact beyond attitudes: When does intergroup contact predict greater collective action support?. *Journal of Theoretical Social Psychology*, 3(1), 11-22.
- MacInnis, C.C., & Page-Gould, E. (2015). How can intergroup interaction be bad if intergroup contact is good? Exploring and reconciling an apparent paradox in the science of intergroup relations. *Perspectives on Psychological Science*, 10(3), 307-327.
- McKeown, S., Williams, A., & Pauker, K. (2017). Stories that move them: Changing children's behaviour toward diverse peers. *Journal of Community and Applied Social Psychology*, 27, 381-387.
- Menard S. (1995). *Applied logistic regression analysis: Sage university series on quantitative applications in the social sciences*. Thousand Oaks CA: Sage.
- Novak, J., Feyes, K. J., & Christensen, K. A. (2011). Application of intergroup contact theory to the integrated workplace: Setting the stage for inclusion. *Journal of Vocational Rehabilitation*, 35(3), 211-226.
- Oreopolous, P. (2011). Why do skilled immigrants struggle in the labor market? A field experiment with thirteen thousand resumes. *American Economic Journal: Economic Policy*, 3(4), 148-171.
- Paluck, E.L., & Green, D.P. (2009). Prejudice reduction: What works? A review and assessment of research and practice. *Annual Review of Psychology*, 60, 339-367.
- Parkins, I.S., Fishbein, H.D., & Ritchey, P.N. (2006). The influence of personality on workplace bullying and discrimination. *Journal of Applied Social Psychology*, 36(10), 2554-2577.

- Pendry, L. F., Driscoll, D. M., & Field, S. C. (2007). Diversity training: Putting theory into practice. *Journal of Occupational and Organizational Psychology*, 80(1), 27-50.
- Pettigrew, T.F., & Tropp, L.R., (2006). A meta-analytic test of intergroup contact theory. *Interpersonal Relations and Group Processes*, 90(5) 751-783.
- Pettigrew, T.F., & Tropp, L.R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators? *European Journal of Social Psychology*, 38, 922-934.
- Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of personality and social psychology*, 75(3), 811.
- Pratto, F., Sidanius, J., Stallworth, L.M., & Malle, B.F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67(4), 741-763.
- Pratto, F., Çidam, A., Stewart, A.L, Zeineddine, F.B., Aranda, M., Aiello, A., & Henkel, K.E. (2012). Social dominance in context and in individuals: Contextual moderation of robust effects of social dominance orientation in 15 languages and 20 countries. *Social Psychological and Personality Science*, 4(5), 587-599.
- United Nations High Commissioner for Refugees (2018a). What is a refugee? *Refugee Facts*. Retrieved from <https://www.unrefugees.org/refugee-facts/what-is-a-refugee/> Department of State, Bureau of Population, Refugees, and Migration (2018). *Summary of Refugee Admissions as of 30-June 2018* [Data file]. Retrieved from <http://www.wrapsnet.org/admissions-and-arrivals/>
- Sidanius, J., Kteily, N., Sheehy-Sleffington, J., Ho, A.K., Sibley, C., & Duriez, B. (2013). You're inferior and noy worth our concern: The interface between empathy and social dominance orientation. *Journal of Personality*, 81(3). 313-323.
- Sidanius, J., Pratto, F., Van Laar, C., & Levin, S. (2004). Social dominance theory: Its agenda and method. *Political Psychology*, 25(6), 845-880.
- Siegel, J. T., & Navarro, M. (2019). A conceptual replication examining the risk of overtly listing eligibility criteria on Amazon's Mechanical Turk. *Journal of Applied Social Psychology*, 49(4), 239-248.
- Stats Canada (2017). *Immigrant income by years since landing, Canada* [Data file]. Retrieved from <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=4310000701>
- Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues*, 41, 157–175.
- Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3<sup>rd</sup> ed). Northridge. Cal.: Harper Collins.
- Tabachnick, B. G., & Fidell, L. S. (2012). *Using multivariate statistics* (6<sup>th</sup> ed.). Boston.: Pearson Education.



- Thomsen, J.P.F. (2012). How does intergroup contact generate ethnic tolerance? The contact hypothesis in a Scandinavian context. *Scandinavian Political Studies*, 35(2), 159-178.
- Tomaskovic-Devey, D. & Skaggs, S. (1999). An establishment-level test of the statistical discrimination hypothesis. *Work and Occupations*, 26(4), 422-445.
- Turner, R. N., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology*, 93(3), 369-388.
- United States Citizenship and Immigration Services (2019). *Asylum*. Retrieved from <https://www.uscis.gov/humanitarian/refugees-asylum/asylum>.
- Van Laar, C., Levin, S., Sinclair, S., & Sidanius, J. (2005). The effect of university roommate contact on ethnic attitudes and behaviour. *Journal of Experimental Social Psychology*, 41(4), 329-345.
- Voci, A. & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes and Intergroup Relations*, 6, 37-54.
- Wessling, K.S., Huber, J., & Netzer, O. (2017). MTurk Character Misrepresentation: Assessment and Solutions. *Journal of Consumer Research*, 44(1), 211-230.
- West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56-75). Thousand Oaks, CA, US: Sage Publications, Inc.
- Yu, S., Ouellet, E., & Warmington, A. (2007). Refugee integration in Canada: A survey of empirical evidence and existing services. *Refuge*, 24(2), 17-34.

## Tables

Table 1. Correlation Matrix of Measured Variables

		1	2	3	4	5	6	7	8	9	10	11	12	13
1.Contact Quantity	r	(.90)												
	N	376												
2.Contact Quality	r	.35***	(.83)											
	N	294	295											
3.Optimal Diversity	r	.20***	.08	1										
	N	376	295	379										
4.Group Empathy	r	.16**	.46***	.11*	(.97)									
	N	376	295	379	379									
5.Intergroup Anxiety	r	-.13*	-.45***	-.06	-.53***	(.90)								
	N	376	295	379	379	379								
6.General Attitudes	r	.15**	.46***	.13*	.80***	-.62***	1							
	N	376	295	379	379	379	379							
7.Hiring Attitudes	r	.11*	.37***	.05	.55***	-.47***	.60***	(.84)						
	N	376	295	379	379	379	379	379						
8.Hiring Intentions	r	.23***	.50***	.11*	.66***	-.47***	.66***	.60***	1					
	N	376	295	379	379	379	379	379	379					
9.Hiring Behaviour	r	.34***	.04	.05	-.17	.04	-.09	.01	-.08	1				
	N	119	116	119	119	119	119	119	119	119				
10. SDO	r	-.03	-.45***	-.07	-.60***	.41***	-.56***	-.53***	-.51***	.18+	(.83)			
	N	376	295	379	379	379	379	379	379	119	379			

11. Age	r	-.14**	-.07	-.09	.03	-.11*	.05	-.02	-.11*	-.23*	.03	1	
	N	376	295	379	379	379	379	379	379	119	379	379	
12. Ethnicity	r	.20***	.05	.03	.09	-.07	.11*	.08	.09	.05	-.10	-.17*	1
	N	376	295	379	379	379	379	379	379	119	379	379	379
13. Gender	r	.00	.03	-.01	.12*	-.06	.05	.11*	.09	-.01	-.14	.03	.02
	N	371	291	374	374	374	374	374	374	117	374	374	374

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Notes: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , + $p = .051$ . Scale alpha reliabilities can be found on the diagonals where applicable. Ethnicity coded such that 1 = non-white, and 0 = white. Gender coded such that 1 = female and 0 = male.

Table 2. Descriptive Statistics for Measured Variables

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis	Tolerance	VIF
Contact Quantity	376	1.00	6.60	2.30	1.45	1.21	0.59	0.82	1.22
Contact Quality	295	1.00	7.00	5.18	1.28	-1.36	2.20	0.62	1.62
Optimal Diversity	379	0.00	7.00	1.19	1.33	1.04	1.09	0.96	1.05
Group Empathy	379	1.00	7.00	5.52	1.42	-0.99	0.60	0.29	3.42
Intergroup Anxiety	379	1.00	5.86	2.59	0.94	0.66	0.16	0.53	1.90
Attitudes	379	1.00	10.00	7.73	1.98	-1.08	1.00	0.27	3.67
Hiring Attitudes	379	1.00	7.00	4.26	1.42	0.05	-0.66	0.52	1.91
Hiring Intentions	379	1.00	7.00	5.13	1.44	-0.50	0.04	0.42	2.39
Hiring Behaviour	119	1.00	5.00	2.11	0.89	1.47	3.04		
SDO	379	1.00	7.00	2.30	1.38	0.87	-0.15	0.49	2.04

Notes: VIF = Variance inflation factor.

Table 3. Overview of Hypotheses, Results, and Support

Hypothesis/Research Question	Analysis	Result	Supported?
H1a (Contact Quantity + Empathy)	Correlation	Positive Correlation	Supported
H1b (Contact Quantity + Int Anx)	Correlation	Negative Correlation	Supported
H1c (Contact Quantity + Attd)	Correlation	Positive Correlation	Supported
H2a (Contact Quality + Empathy)	Correlation	Positive Correlation	Supported
H2b (Contact Quality + Int Anx)	Correlation	Negative Correlation	Supported
H2c (Contact Quality + Attd)	Correlation	Positive Correlation	Supported
H3a (Diversity + Empathy)	Correlation	Positive Correlation	Supported
H3b (Diversity + Int Anx)	Correlation	No Correlation	Not Supported
H3c (Diversity + Attd)	Correlation	Positive Correlation	Supported
H4 (Contact Quantity → Attd w/ Empathy + Int Anx)	Mediation	Full Mediation	Supported
H5 (Contact Quality → Attd w/ Empathy + Int Anx)	Mediation	Full Mediation	Supported
H6 (Diversity → Attd w/ Empathy + Int Anx)	Mediation	Full Mediation (Only Empathy)	Partially Supported
H7 (Attd → Hiring Attd)	Linear Regression	Positive Relationship	Supported
H8a (Hiring Attd → Hiring Int)	Linear Regression	Positive Relationship	Supported
H8b (Hiring Attd → Hiring Beh)	Linear Regression	No Relationship	Not Supported
H9 (Hiring Int → Hiring Beh)	Linear Regression	No Relationship	Not Supported
H10 (Contact Stronger Than Diversity w/ All Relationships)	Fisher Z-Transformations	See pg. 35-36	Partially Supported
H11 (Contact Stronger than Diversity w/ All Relationships)	Path Analysis	See Figure 5	Partially Supported
RQ1a (Contact Quantity → Attd w/SDO)	Moderation	No Moderation	Not Supported
RQ1b (Contact Quality → Attd w/SDO)	Moderation	No Moderation	Not Supported
RQ2 (Diversity → Attd w/ SDO)	Moderation	No Moderation	Not Supported
RQ3a (Contact Quantity → Empathy w/ SDO)	Moderation	No Moderation	Not Supported
RQ3b (Contact Quality → Empathy w/SDO)	Moderation	No Moderation	Not Supported
RQ3c (Diversity → Empathy w/SDO)	Moderation	No Moderation	Not Supported

Table 4. Contact quantity predicting intergroup anxiety as moderated by SDO

Criterion	Predictor	b	95% CI	SE	t/z	df
<b>Intergroup Anxiety</b>	Contact Quantity	<b>-.28***</b>	-.39, -.16	.06	-4.63	3, 372
	SDO	.09	-.03, .20	.06	1.51	
	Contact Quantity X SDO	<b>.09***</b>	.04, .13	.02	3.88	
	low SDO	<b>-.19***</b>	-.27, -.11	.04	-4.53	
	average SDO	<b>-.27*</b>	-.14, -.02	.03	-2.58	
	high SDO	.04	-.04, .13	.04	1.01	

Notes: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table 5. Contact quality predicting intergroup anxiety as moderated by SDO

Criterion	Predictor	b	95% CI	SE	t/z	df
<b>Intergroup Anxiety</b>	Contact Quality	<b>-0.40***</b>	-.55, -.25	0.08	-5.29	3, 291
	SDO	-0.08	-.31, .16	0.12	-0.63	
	Contact Quality X SDO	<b>.07**</b>	.02, .11	0.02	2.8	
	low SDO	<b>-.34***</b>	-.48, -.22	0.06	-5.85	
	average SDO	<b>-.25***</b>	-.33, -.17	0.04	-6.05	
	high SDO	<b>.16***</b>	-.25, -.07	0.05	-3.56	

Notes: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table 6. Correlation Matrix of Measured Variables with Dichotomous Hiring Behaviour

[illegible]



11. Age	r	-.14**	-.07	-.09	.03	-.11*	.05	-.02	-.11*	-.13*	.03	1		
	N	376	295	379	379	379	379	379	379	379	379	379		
12. Ethnicity	r	.20***	.05	.03	.09	-.07	.11*	.08	.09	.09	-.10	-.17*	1	
	N	376	295	379	379	379	379	379	379	379	379	379	379	
13. Gender	r	.00	.03	-.01	.12*	-.06	.05	.11*	.09	-.03	-.14	.03	.02	1
	N	371	291	374	374	374	374	374	374	374	374	374	374	

Notes: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , + $p = .051$ . Scale alpha reliabilities can be found on the diagonals where applicable.  
 Ethnicity coded such that 1 = non-white, and 0 = white. Gender coded such that 1 = female and 0 = male.

## Figures

### Predictors

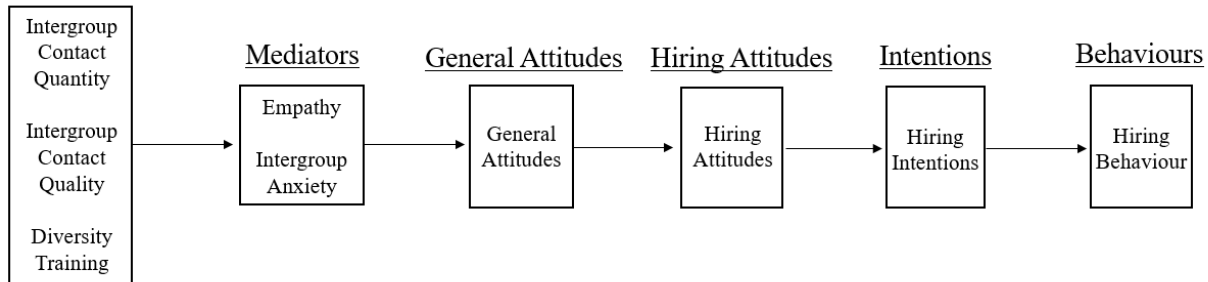


Figure 1. A theoretical model for intergroup contact, diversity training, mediating mechanisms, attitudes, and intention/behaviour toward refugees.

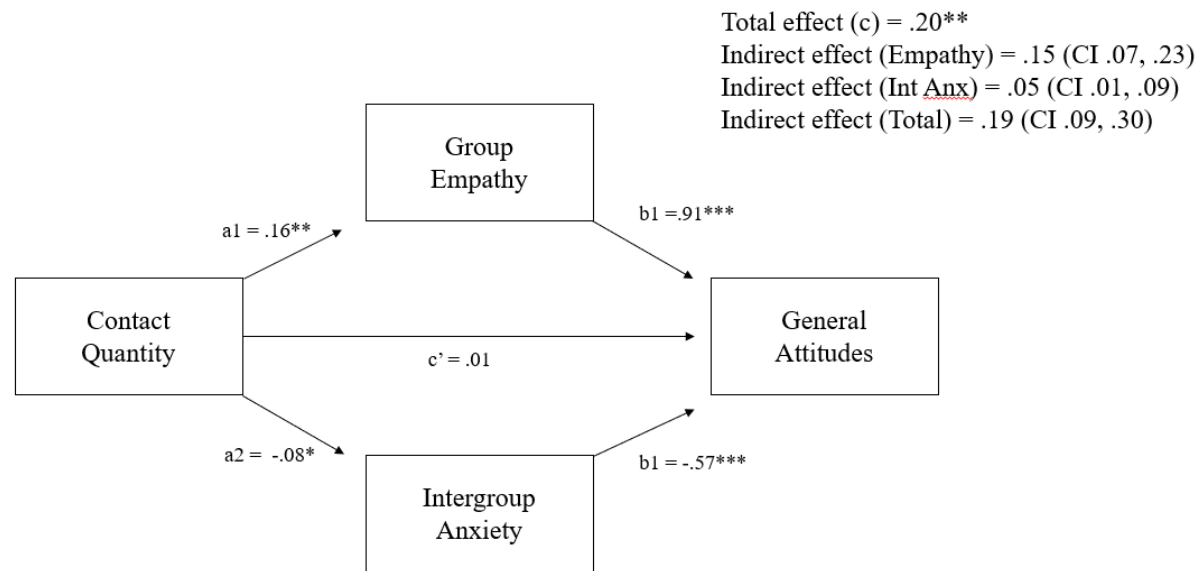


Figure 2. Mediated relationship between contact quantity and general attitudes. Unstandardized estimates presented.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

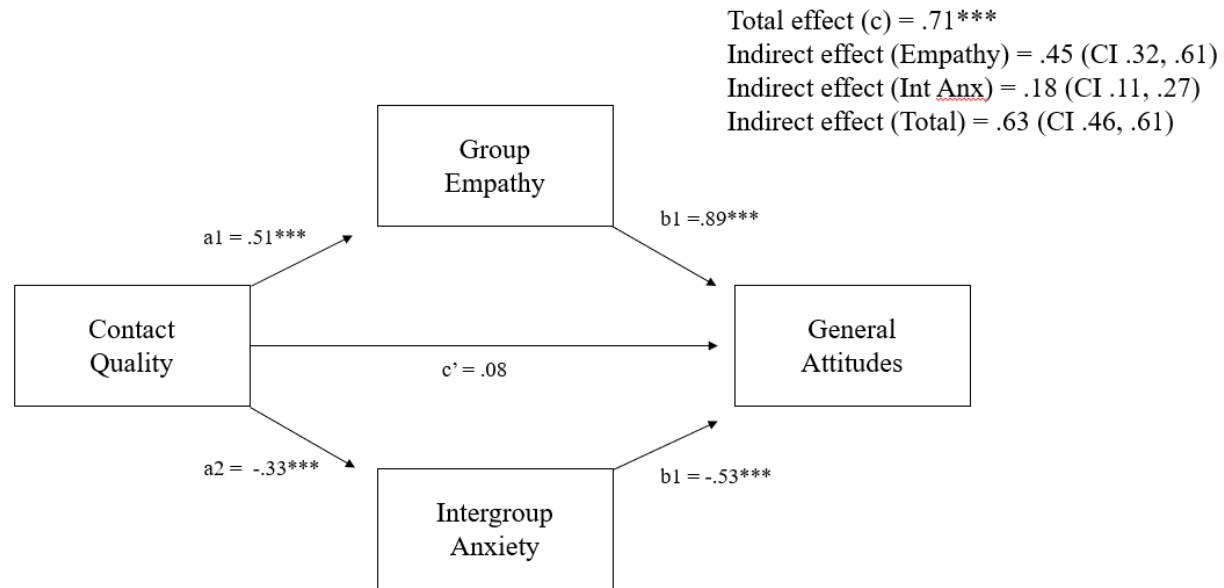


Figure 3. Mediated relationship between contact quality and general attitudes. Unstandardized estimates presented.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

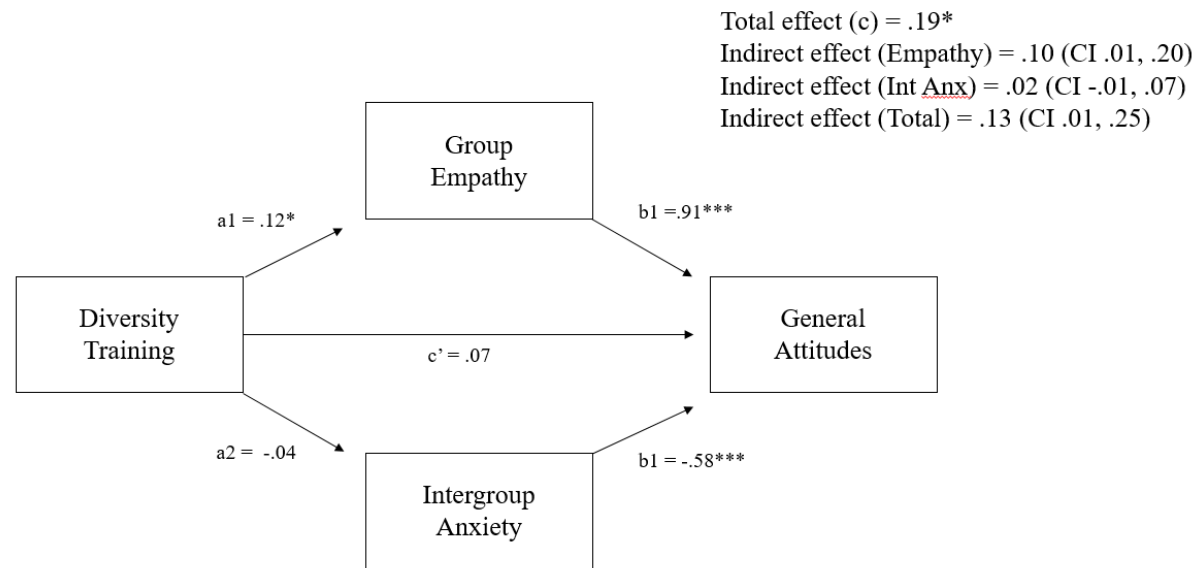


Figure 4. Mediated relationship between diversity training and general attitudes. Unstandardized estimates presented.  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

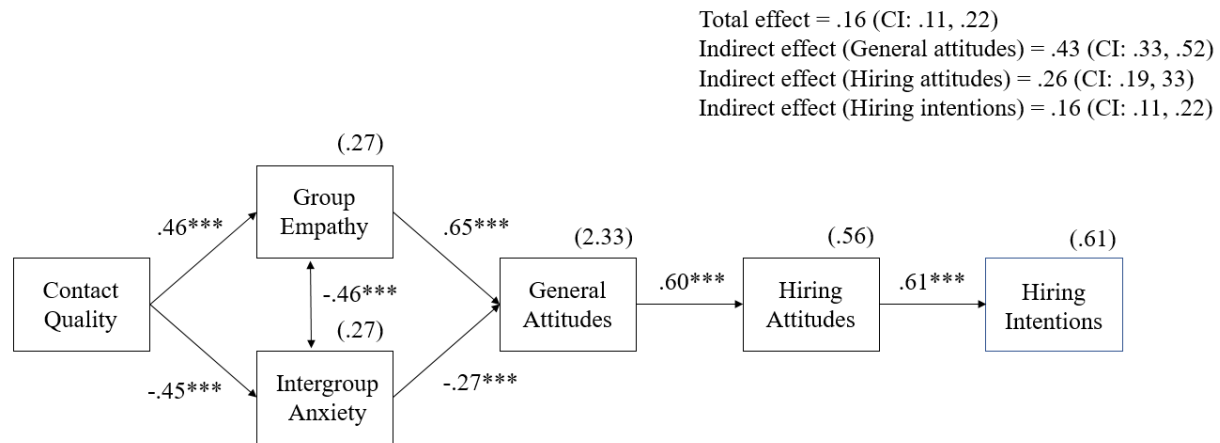


Figure 5. Path analysis of relationship between contact quality to hiring intentions. Only significant paths presented. Standardized paths presented. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Values in brackets represent Cohen's  $f^2$  effect sizes.

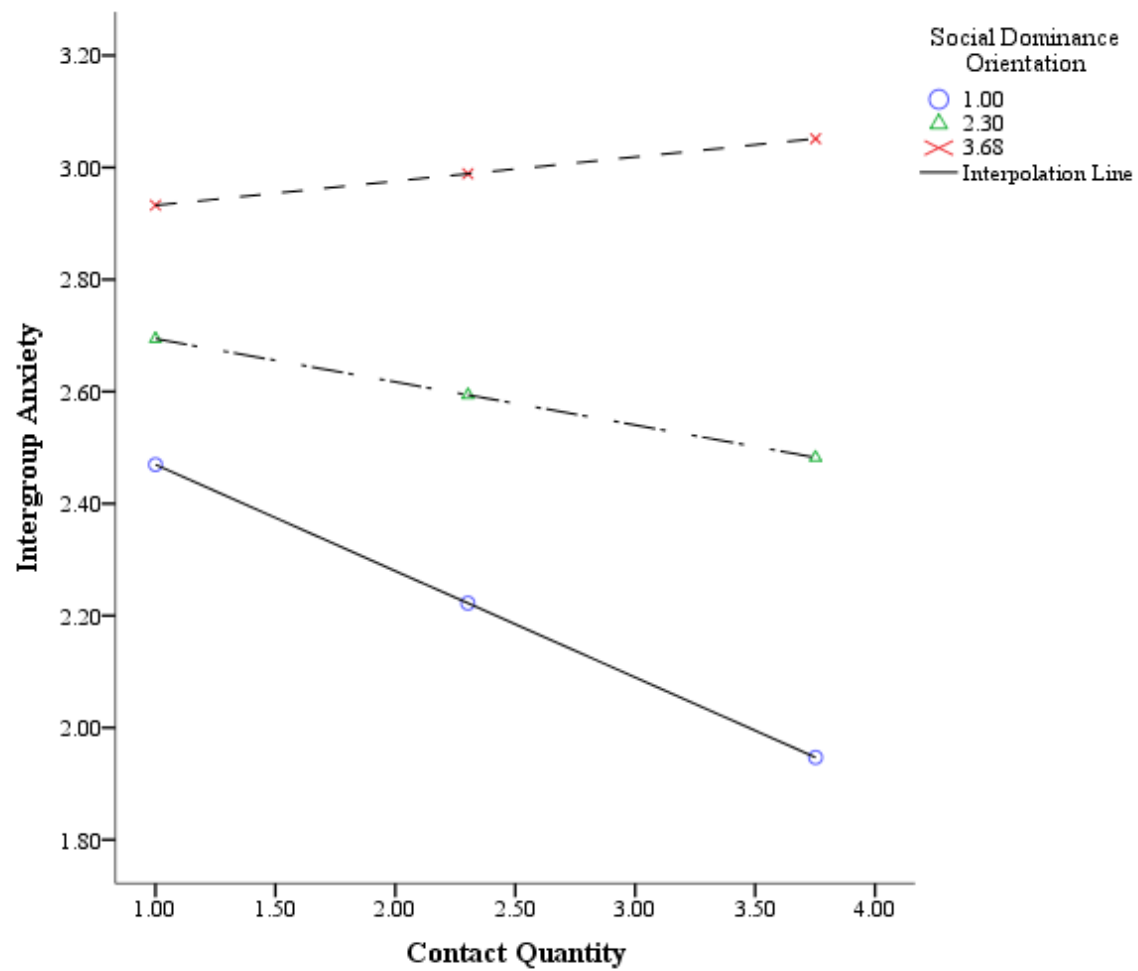


Figure 6. Moderated relationship of contact quality and SDO on intergroup anxiety.

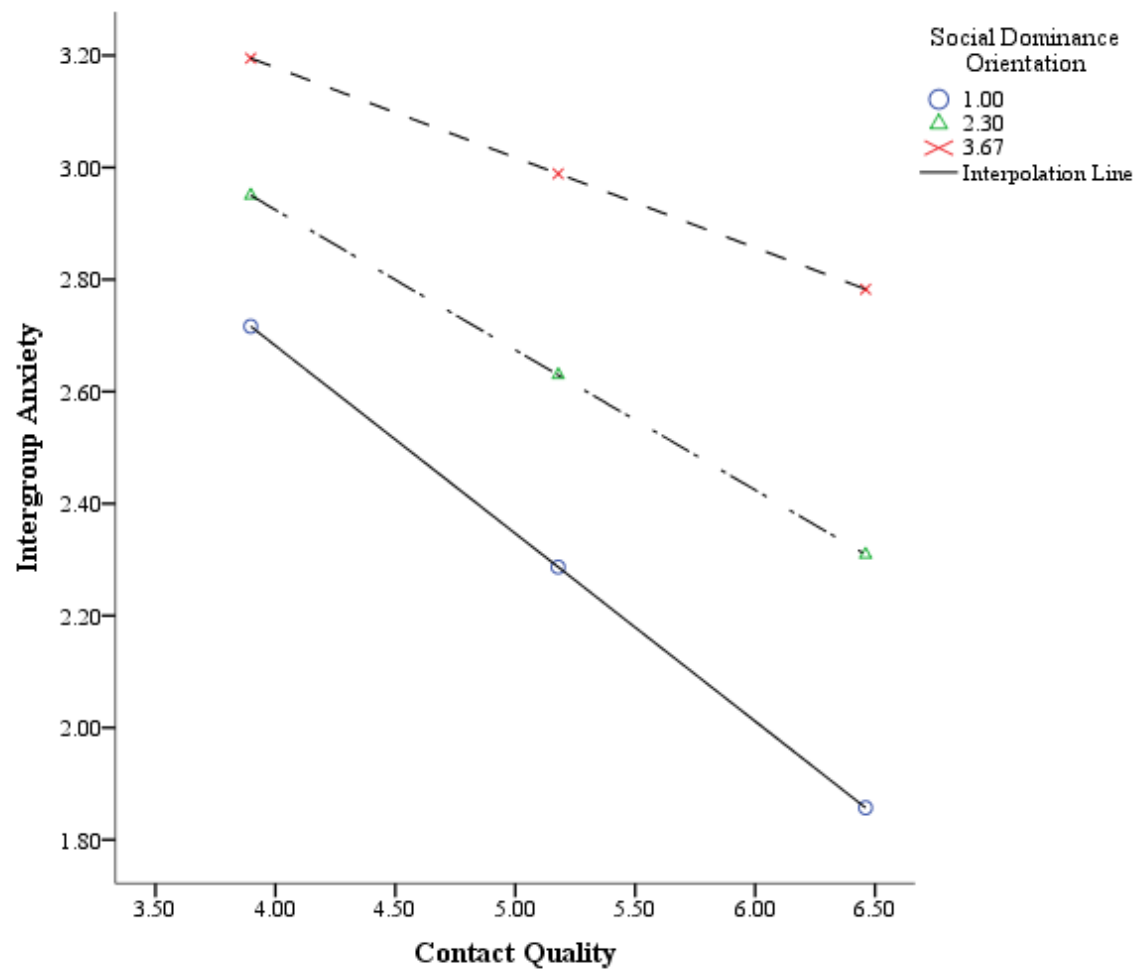


Figure 7. Moderated relationship of contact quality and SDO on intergroup anxiety.



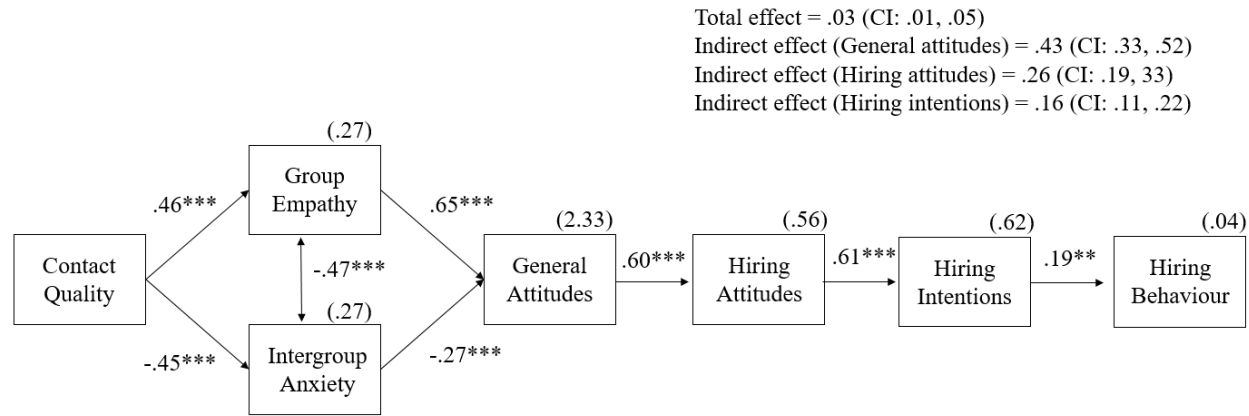


Figure 8. Path analysis of relationship between contact quality to dichotomous hiring behaviour. Only significant paths presented. Standardized paths presented. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Values in brackets represent Cohen's  $f^2$  effect sizes.

### Footnotes

<sup>1</sup>A number of other measures were included when the data was collected, but these were not analyzed for this project, nor were they intended to be analyzed for this project.

<sup>2</sup>Diversity training was also explored in a dichotomous fashion (any diversity training versus no diversity training). Whereas the original conceptualization of diversity training was positively associated with contact quantity, empathy, general attitudes, and hiring intentions, the dichotomous diversity training was additionally positively associated with contact quality, hiring attitudes, and dichotomous hiring behaviour. Diversity training was also marginally ( $p = .051$ ) negatively associated with intergroup anxiety. All remaining associations between dichotomous diversity training and other variables remained the same as the additive conceptualization of diversity training.

## Appendix A

**As Predicted:** "Contact, Diversity, Individual Differences, and Refugees" (#19667)

**Created:** 02/16/2019 09:21 PM (PT)

### Author(s)

Harrison Boss (University of Calgary) – "email address"

Cara MacInnis (University of Calgary) – "email address"

### 1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

### 2) What's the main question being asked or hypothesis being tested in this study?

We are investigating the impact of intergroup contact and diversity training on employers' general attitudes, hiring attitudes, hiring intentions, and hiring behaviours.

H1) higher contact quantity will be associated with a) greater empathy toward refugees b) lower intergroup anxiety, and c) more positive general attitudes toward refugees.

H2) Higher contact quality will be associated with a) greater empathy toward refugees, b) lower intergroup anxiety, and c) more positive general attitudes toward refugees.

H3) diversity training under optimal conditions (in person, over 4 hours, spaced out sessions, and internal manager/direct supervisor led) will be associated with a) greater empathy toward refugees b) lower intergroup anxiety, c) more positive general attitudes toward refugees.

H4) Both empathy and intergroup anxiety will mediate the relationship between intergroup contact quantity and general attitudes toward refugees.

H5) Both empathy and intergroup anxiety will mediate the relationship between intergroup contact quality and general attitudes toward refugees.

H6) Both empathy and intergroup anxiety will mediate the relationship between diversity training and general attitudes toward refugees.

H7) More positive general attitudes toward refugees will predict more positive hiring attitudes toward refugees.

H8) More positive hiring attitudes will be associated with a) greater hiring intentions and b) greater hiring behaviour.

H9) Greater hiring intentions will predict greater hiring behaviour.

H10) Both intergroup contact quantity and quality will predict both the mediating mechanisms of empathy and intergroup anxiety and all relationships more strongly than diversity training (when hypotheses 4-9 are tested individually).

H11) Both intergroup contact quantity and quality (but not diversity training) will predict both mediating mechanisms of empathy and intergroup anxiety and all relationships (when hypotheses 4-9 are tested simultaneously).

RQ1) We will explore whether SDO moderates the relationship between a) intergroup contact quantity and general attitudes toward refugees. It is possible that this relationship may be stronger for those higher in SDO than those lower in SDO. This pattern may also be found for b) intergroup contact quality.

RQ2) SDO may also moderate the relationship between diversity training and general attitudes toward refugees. This is exploratory.

RQ3) We will test whether SDO moderates the relationships between contact a) quantity b) quality c) diversity training and empathy toward refugees. This is exploratory, as SDO may weaken or strengthen the positive relationship between contact/diversity training and empathy.

### **3) Describe the key dependent variable(s) specifying how they will be measured.**

Social dominance orientation (SDO) will be assessed using a 4-item measure adapted from Pratto et al (2013). Intergroup contact (quantity and quality) will be measured with 10-items adapted from Islam & Hewstone (1993). Past diversity training will be assessed by a measure created by the authors, but are loosely based on factors shown to be important by Kalinoski et al (2013). A 6-item scale of empathy toward outgroups was adapted from Batson et al, 1997. A 15-item scale of intergroup anxiety (Stephan & Stephan, 1985) will be utilized. General attitudes toward refugees will be measured using an attitude thermometers adapted from Haddock, Zanna, & Esses (1993). A 7-item measure of hiring attitudes toward refugees will be used, 2 items were adapted from Lundborg & Skedinger (2014). Hiring intentions will be measured with a single item created by the authors. Hiring behaviour toward refugees will be assessed with 8-items also created by the authors.

### **4) How many and which conditions will participants be assigned to?**

There are no conditions, as this is correlational in design.

### **5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.**

1) Pearson correlations will be used to assess the associations between all variables. The magnitude of correlations will be compared using Fisher Z-transformations to examine H9. 2) Path analysis will be used to both simultaneously test the full model (Hypotheses 4-9) and separately test hypotheses 4-9. 3) Multiple regression analysis using the PROCESS macro will be used to test moderation hypotheses (i.e. RQ1, RQ2, RQ3). If any interactions are significant they will be probed at low (mean -1SD), medium (mean), and high (+ 1SD) values of the moderator.

### **6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.**

I will report our results both with outliers included, and with them removed. Outliers will be identified by computing the overall standard deviation and removing any outliers beyond 3.0 SD above/below the mean. The participants for this study were selected based on a database identifying those that have or have had authority to hire employees. Any participants that do not identify (through demographic survey items) as having this authority will be removed from the analysis. Additionally, as all participants for this study also belong to a recently established research database, if any participant provides demographics that appear unusual (e.g. if reported age is more than a year different than our database information) we will exclude them from analysis. Any participant that fails at least 1 of our 2 attention checks will be excluded from analysis.

### **7) How many observations will be collected or what will determine sample size?**

**No need to justify decision, but be precise about exactly how the number will be determined.**

We will aim to collect data from 450 participants.

### **8) Anything else you would like to pre-register?**

**(e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)**

Nothing else to pre-register.

## **Appendix B**

### **Demographics.**

- Age (please enter numerically, ie 32, not thirty-two):
- Gender (select one):
  - Man
  - Woman
  - You do not have an option that applies to me. I identify as: (please specify)
- What is your ethnic background? (please specify)
- Do you identify as a member of any of the following ethnic groups? (please select any that apply)
  - White/Caucasian/European
  - Black/African-American
  - East Asian
  - South Asian
  - Native American
  - Middle Eastern
  - Hispanic/Latino/South American
  - Other (please specify)
- Do you identify as a member of any of the following groups?
  - Born in the United States
  - Immigrant
  - Refugee
  - Other (please specify)

### **Hiring Relevant Information**

At your current/past places of employment have you engaged in any of the following activities (please select all that apply)

- Made final decisions related to spending/investments at your place of business
- Involved in decisions related to spending/investments at your place of business, but not the sole/decision maker
- Made final hiring decisions of personnel
- Involved in hiring decisions, but was not the sole/final decision maker
- Responsible for selling/sales of services or products
- Often in direct contact with customers and/or involved customer inquiries
- Involved in IT/Computer-related troubleshooting
- How regularly are you involved in the hiring of new employees? (1[all the time] to 7 [never])

Approximately how many individuals do you personally hire each year? (Less than 5, 5-10, 10-25, more than 25)

Approximately how many job applications do you review each year? (Less than 10, 11-50, 51-200, more than 200).

Approximately how many individuals does your place of business employ? (Less than 10, 10-25, 25-100, more than 100).

What type of industry do you work in?

- ☐ Agriculture
- ☐ Construction
- ☐ Manufacturing
- ☐ Retail
- ☐ Transportation
- ☐ Finance
- ☐ Education
- ☐ Health care
- ☐ Food services
- ☐ Accommodation
- ☐ Other

What is your definition of a refugee? (Please provide your definition in the box below)

### **Social Dominance Orientation Scale (Pratto et al, 2013)**

There are many kinds of groups in the world: men and women, ethnic and religious groups, nationalities, political factions. How much do you support or oppose the ideas about groups in general? Next to each statement, write a number from 1 to 10 to show your opinion.

1	2	3	4	5	6	7	8	9	10
Extremely									Extremely
Oppose									Favor

1. In setting priorities, we must consider all groups
2. We should not push for group equality
3. Group equality should be our ideal
4. Superior groups should dominate inferior groups

### **Intergroup Contact (Islam and Hewstone, 1993)**

- Quantity
  - Rate your agreement with the statement below
  - (None at all (1) to A great deal (7), (8) Don't know)
    - How much contact have you had with refugees as neighbours?
    - How much have you visited refugees in their homes?
    - How much contact have you had with refugees as close friends?
    - How often do you engage in informal discussion with refugees?
    - How much contact have you had with refugees while at work?
- Quality
  - Rate your agreement with the statement below
  - (None at all (1) to A great deal (7), (8) Don't know)
    - Our interaction was as equals
    - Our interaction was intimate
    - Our interaction was cooperative
    - Our interaction was voluntary
    - Our interaction was pleasant

## Diversity Training

- In person
  - Have you completed an “in person” diversity training program?
    - If yes,
    - What was the duration of this program? (1 hour or less, half a day, full day, more than a full day)
    - Did the training take place over multiple sessions? (No, multiple sessions over a single day, multiple sessions over a week, multiple sessions over a month, multiple sessions between 1 and 6 months, multiple sessions between 6 months and a year, multiple sessions over more than a year)
    - Approximately how many training sessions occurred over the course of the entire training? (1 session, 2 sessions, 3 sessions, 4 sessions, 5 or more sessions).
    - Who led the training program? (Self-guided, an external trainer, internal manager – but non-direct manager/supervisor, a direct manager/supervisor, Other – Please list).
    - How recently did you complete this training? (I am currently completing this training, less than 3 months ago, less than 6 months ago, less than 1 years ago, 1-3 years ago, more than 3 years ago)
    - What was the name of the training program?
    - Please very briefly describe the content of the program
- Online
  - Have you completed an online diversity training program?
    - If yes,
    - What was the duration of this program? (1 hour or less, half a day, full day, more than a full day)

- Did the training take place over multiple sessions? (No, multiple sessions over a single day, multiple sessions over a week, multiple sessions over a month, multiple sessions between 1 and 6 months, multiple sessions between 6 months and a year, multiple sessions over more than a year)
- Approximately how many training sessions occurred over the course of the entire training? (1 session, 2 sessions, 3 sessions, 4 sessions, 5 or more sessions).
- Who led the training program? (Self-guided, an external trainer, internal manager – but non-direct manager/supervisor, a direct manager/supervisor, Other – Please list)
- How recently did you complete this training? (I am currently completing this training, less than 3 months ago, less than 6 months ago, less than 1 years ago, 1-3 years ago, more than 3 years ago)
- What was the name of the training program?
- Please very briefly describe the content of the program

**Empathy toward an outgroup (adapted from Batson et al, 1997)**

1	2	3	4	5	6	7
Not at						Very
all						Much

1. To what extent do you feel sympathetic toward refugees?
2. To what extent do you feel compassionate toward refugees?
3. To what extent do you feel soft-hearted towards refugees?
4. To what extent do you feel warm toward refugees?
5. To what extent do you feel tender toward refugees?
6. To what extent do you feel moved by refugees?

**Intergroup Anxiety (Stephan & Stephan, 1985)**

Please insert a number next to each adjective to rate you would feel meeting with a refugee

1	2	3	4	5	6	7
Not at						Very
all						

\_\_\_ Awkward

\_\_\_ Self-conscious

\_\_\_ Happy

\_\_\_ Accepted

\_\_\_ Confident



- \_\_\_ Irritated
- \_\_\_ Impatient
- \_\_\_ At ease
- \_\_\_ Suspicious
- \_\_\_ Careful
- \_\_\_ Defensive
- \_\_\_ Apprehensive
- \_\_\_ Worried
- \_\_\_ Certain
- \_\_\_ Anxious

### **General Attitudes** (Haddock, Zanna, & Esses, 1993)

- Below you will see something that looks like a thermometer. We would like you to use the thermometer to indicate your overall attitude towards refugees

0-10°	11-20°	21-30°	31-40°	41-50°	51-60°	61-70°	71-80°	81-90°	91-100°
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Attitudes toward hiring refugees (Items #4 and #5 adapted from Lundborg & Skedinger, 2014)**

Rate your agreement with the statements below

(Strongly disagree [1] to Strongly Agree [7])

- It is preferable to provide jobs to American-born individuals
- We should provide jobs to American-born individuals before we provide them to refugees
- I am favourable toward hiring refugees
- My experiences employing refugees have been positive
- Our customers and/or clients prefer contact with American-born employees rather than with refugee employees
- I believe in hiring refugees only when they are more qualified than American-born applicants
- I believe that most refugees are less qualified than American-born applicants

### **Hiring Intentions** (Araten-Bergman, 2016)

Rate your agreement with the statement below

(Strongly disagree [1] to Strongly Agree [7])

- To what extent do you intend to hire refugee candidate?

Why do you intend / not intend to hire refugees at your place of business? (Please briefly answer in the textbox below)

### **Hiring Behaviours**

Has your company/organization hired any refugees in the past 5 years? (Yes, No, I don't know)

(If yes) Approximately how many refugees has your company/organization hired in the last 5 years? (None, 1-2 refugees, 3-4 refugees, 5-6 refugees, 7+ refugees, I Don't know)

Have you hired any refugees in the past 5 years? (Yes, No, I don't know)

(If yes) Approximately how many refugees have you personally hired in the last 5 years? (None, 1-2 refugees, 3-4 refugees, 5-6 refugees, 7+ refugees, I Don't know)

Of those hired, how many were hired into entry-level positions? (0-20%, 20-40%, 40-60%, 60-80%, 80-100%, I don't know)

Of those hired, how many were hired into supervisory-level positions? (0-20%, 20-40%, 40-60%, 60-80%, 80-100%, I don't know)

Of those hired, how many were hired into senior-level/managerial positions? (0-20%, 20-40%, 40-60%, 60-80%, 80-100%, I don't know)

Of those refugees hired in the past 5 years, how many are still employed in your company? (0-20%, 20-40%, 40-60%, 60-80%, 80-100%, I don't know)

Of those refugees employed, how many have seen upward mobility/advancement? (0-20%, 20-40%, 40-60%, 60-80%, 80-100%, I don't know)

## Appendix C

### Analyses without outliers

When running all analyses without outliers ( $N = 352$ ) only several minor differences emerged. First, when exploring correlations, diversity training become no longer significantly associated with empathy ( $r = .05, p = .369$ ), general attitudes ( $r = .10, p = .056$ ), or hiring intentions ( $r = .08, p = .136$ ). All other hypothesized correlational relationships remained the same.

When exploring differences among exploratory analyses, all relationships remained the same with one exception. The relationship between contact quality and intergroup anxiety becomes non-significant ( $b = .06, t(268) = 1.56, p = .121$ ). This seems to indicate that a relatively small number of individuals may be driving this relationship.

All other relationships that were previously tested and significant remained significant and in the same direction, and at a similar magnitude. Those relationships that were non-significant with outliers remained non-significant.