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The Behavioural Consequences of the Implicit and Explicit Dehumanization of Refugees

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Abstract

The present research investigated the behavioural consequences in a social interaction of implicit and explicit refugee dehumanization. To this end, this research employed an experimental design in which 93 undergraduate students interacted with a confederate whom they either believed to be a refugee or a Canadian student. The interaction was videotaped and coded for participants' positivity of nonverbal and verbal behaviours. The results showed that increased implicit refugee dehumanization predicted less positive nonverbal behavior, and that increased explicit refugee dehumanization tended to predict less positive interaction quality based on participants' verbal behaviour. Based on these results, the present research also investigated the following two subsidiary research questions utilizing data from the same study. First, does implicit refugee dehumanization predict specific nonverbal behaviours that are indicative of anxiety or general uneasiness and specific nonverbal behaviours that are indicative of happiness or comfort? Second, do implicit and explicit refugee dehumanization predict changes in the positivity of participants' nonverbal and verbal behavior, as well as their specific nonverbal behaviours (e.g., self-touch, facial rigidity), from the beginning to the end of the interaction with a refugee? The results showed that implicit refugee dehumanization and the type of interaction partner (refugee versus Canadian) influenced the extent to which participants had rigid faces, smiled or touched themselves throughout the interaction. In terms of change over time, the results showed that participants' tendency to implicitly dehumanize refugees determined their nonverbal behaviour at the beginning of the interaction. For example, at the beginning of the interaction, participants who implicitly dehumanized refugees displayed less positive nonverbal behaviours, had more rigid faces and smiled less when interacting with a refugee compared to a Canadian. As the interaction unfolded, however, participants' nonverbal behaviours became more positive regardless of their implicit refugee dehumanization scores and experimental condition. Participants' verbal behaviour as well as participants' specific nonverbal behaviours did not change over time, on average. The present research is the first demonstration that implicit and explicit refugee dehumanization have behavioural consequences in a social interaction.

Keywords: refugees, dehumanization, behaviour, implicit measures

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Chapter 1

1 Introduction

Dehumanization of others is a phenomenon that has had a significant impact on human history. For example, the description of Jews as 'rats' by the Nazis during the First and Second World War or the description of the Tutsis as 'cockroaches' by the Hutu-led Radio Rwanda was, in each case, one of the factors that contributed to genocide (Kellow & Steeves, 1998). Dehumanization can be defined as a tendency to regard others as less than human and thus not worthy of treatment according to the moral rights and obligations that bind humankind together (Livingstone-Smith, 2011). However, dehumanization does not always have to be expressed in a blatant and extreme form. In fact, more recently researchers in Social Psychology have started to examine more subtle ways of dehumanizing outgroups. For example, Esses, Veenvliet, Hodson and Mihic (2008) found that refugees are more likely to be viewed as immoral and failing to uphold prosocial values. Moreover, Medianu (2010) and Medianu, Sutter and Esses (2016) showed that on an implicit level, the concept of refugee is more likely to be associated with the concept of animal than the concept of human in comparison to the Canadian concept. However, to date it remains unclear if and how these subtle forms of dehumanization have an impact on actual behaviour. The present research attempts to address this gap in the literature. In particular, the present research examines the consequences of a subtle form of dehumanization, implicit dehumanization of refugees, on behaviour. Do people who implicitly dehumanize refugees show less positive behaviour toward refugees? The topic of refugees and their treatment has particular importance in today's world given their increasing numbers. For example, according to the Institute for Economics and Peace, the world has not seen so many refugees since 1945 (Alexander, 2015). In fact, in 2015 there were an estimated 21.3 million refugees worldwide (UNHCR, 2015a).

To give context to my research question, I will first briefly discuss the importance of studying refugees as a group. Second, I will review the different conceptualizations that researchers have used to study dehumanization as well as research on the behavioural

consequences of dehumanization. Third, I will briefly introduce the reflective-impulsive model of social behaviour (Strack & Deutsch, 2004) in order to explain how implicit and explicit dehumanization may predict behaviour.

1.1 Why Refugees?

The study of refugees, in particular the study of the implicit dehumanization of refugees and its behavioural consequences, is important for two reasons. First, unlike many other minority groups, refugees may elicit both fear and sympathy (Ipsos Mori, 2016). That is, refugees may elicit a specific pattern of emotions and behavioural reactions that may not be comparable to other minority groups, thus justifying the study of refugees as a separate group. Second, the current refugee crisis is one of the major issues of the 21st century. According to the United Nations High Commissioner for Refugees (UNHCR), the total number of refugees has increased significantly over the past few years (UNHCR, 2015b). While many Western countries have committed to accept large numbers of refugees in the near future, Western countries and their citizens do not always regard refugees with sympathy or respect. In fact, in the past, refugee arrivals to Western countries were often followed by a national discourse that characterized refugees as bogus individuals who were migrating purely for economic reasons or terrorists who posed a realistic threat to the safety of host nationals (Ayed, 2015; Esses, Medianu, & Lawson, 2013; Medianu et al., 2016). Furthermore, past research has shown that these portrayals of refugees as bogus or terrorists led to implicit dehumanization of refugees (Medianu et al., 2016). Given this context, it is important to understand how the implicit dehumanization of refugees may affect the treatment of refugees.

1.2 What is Dehumanization?

Researchers have conceptualized dehumanization in several ways. Earlier theories of dehumanization have been guided by a desire to understand how people were able to commit extreme atrocities as witnessed throughout history, such as the Mỹ Lai massacre (Kelman, 1973), the Holocaust (Bandura, 1990; Lifton, 1986), the Vietnam War (Bar-Tal, 1990; Boyle, 1972) and the Rwandan genocide (Kellow & Steeves, 1998). In particular, earlier theories of dehumanization have looked at dehumanization as a

psychological process that enables people to justify extreme violence and aggression toward others. For example, Kelman (1973) argued that by denying victims their identity and sense of community, people are able to deindividuate the victims and are therefore less likely to feel compassion for them. Similarly, Opotow (1990) referred to dehumanization as a form of moral exclusion in which people are placed 'outside the boundary in which moral values, rules, and considerations of fairness apply' (p.1). Following the same logic, Bandura (1999) viewed dehumanization as a mechanism that enables people to 'disengage' their moral self-sanctions against displaying aggression. Overall, these theories suggest that dehumanization is a psychological process that allows people to justify and engage in extreme violence and aggression.

Other researchers have attempted to understand the role of dehumanization in relation to intergroup conflict. For example, Bar-Tal (1989) argued that dehumanization is one way of deligitimizing the outgroup by regarding the outgroup as non-humans. Bar-Tal and Salomon (2006) give the Israeli-Palestinian conflict as an example. This conflict is fueled with dehumanizing portrayals of the outgroup which in turn perpetuate violence and prevent a peaceful resolution. Similarly, Schwarz and Struch (1989) suggest that dehumanization of an outgroup is rooted in perceived intergroup differences in prosocial values and morals. The authors argue that, if people perceive a group to lack prosocial values (e.g., helpful, considerate), then they will judge that group to be less human and thus less worthy of human treatment. In support of this account, Esses et al. (2008) found that refugees were more likely to be viewed as immoral and failing to uphold prosocial values than Canadians.

More recently, Haslam (2006) proposed a two-dimensional model of dehumanization in an attempt to provide a theoretical basis for dehumanization. In particular, he noted that while previous research had defined dehumanization as the denial of humanness to others, it remained unclear what humanness exactly is. Haslam proposed that humanness could be defined either through uniquely human characteristics or human nature characteristics. The difference between these characteristics is that uniquely human characteristics are characteristics that separate humans from animals (e.g., civility, refinement, moral sensibility, rationality and maturity), while human nature

characteristics refer to those characteristics that separate humans from inanimate objects (e.g., emotional responsiveness, interpersonal warmth, cognitive openness, agency and depth). In other words, Haslam argued that when people deny uniquely human characteristics to others, they perceive them as uncivilized, coarse, amoral, irrational and childlike and are thus more likely to dehumanize them in an animal-like way. On the other hand, when people deny human nature characteristics to others, they perceive them as inert, cold, rigid, passive and superficial and are thus more likely to view them as robots or objects, dehumanizing them in a mechanistic way. Based on this, Haslam consequently made the distinction between animalistic and mechanistic dehumanization.

Another more recent theory of dehumanization is infra-humanization theory (Leyens et al., 2000; Leyens, Demoulin, Vaes, Gaunt, & Paladino, 2007). According to Leyens and colleagues (2000; 2007) people dehumanize (in their terms 'infra-humanize' to indicate a partial denial of humanity) outgroups in comparison to ingroups by ascribing fewer uniquely human emotions to the outgroup than to the ingroup. Uniquely human emotions are complex emotions that are specific to humans and that are developed later in life, such as sorrow, admiration and hope (Demoulin et al., 2004). In contrast, non-uniquely human emotions are emotions that are shared with other primates and develop early in life (e.g., anger, fear, surprise and joy). Across several studies, Leyens and colleagues (2001, 2007) showed that people tend to ascribe fewer uniquely human emotions to the outgroup than to the ingroup, thus providing support for their theory. Importantly, their research demonstrated that this phenomenon is robust across intergroup contexts and also occurs in the absence of intergroup conflict.

A common characteristic of the above-mentioned conceptualizations of dehumanization is that they focus on the denial of certain characteristics to others, such as prosocial values (Esses et al., 2008; Schwartz & Struch, 1989), uniquely human characteristics and human nature characteristics (Haslam, 2006), or uniquely human emotions (Leyens et al., 2000; Leyens et al., 2001). Besides these conceptualizations of dehumanization (also termed the attribute-based approach to dehumanization, see Loughnan, Haslam, & Kashima, 2009), other conceptualizations of dehumanization have focused on metaphors or mental associations between concepts. In particular, researchers

have been interested in investigating the extent to which people associate certain groups with the animal concept on an implicit level. Previous research in this domain has shown that, for example, people were faster in identifying images of apes when subliminally primed with Black as opposed to White faces (Goff, Eberhardt, Williams, & Jackson, 2008). Similarly, Boccato, Capozza, Falvo, and Durante (2008) found that people were faster in correctly categorizing human pictures as human (as opposed to categorizing animal pictures as animal) when they were primed with ingroup names (as opposed to outgroup names). Furthermore, previous research has shown that people were more likely to implicitly associate outgroup names (Viki et al., 2006) and indigenous people (Saminaden, Loughnan, & Haslam, 2010) with animal-related words (as opposed to human-related words) compared to ingroup names and people from modern, industrialized societies. Finally, Medianu (2010) and Medianu and colleagues (2016) found that people were more likely to implicitly associate refugees with animals than with humans compared to Canadians. Overall, this body of research suggests that dehumanization can also be understood as the strength of the mental associations between concepts reflecting a particular group or individual and the animal concept.

Upon reviewing the literature, two observations can be made. First, dehumanization has been conceptualized in several ways since it became a topic of study in psychological research. It transitioned from being a phenomenon present in the domains of violence and conflict to being a phenomenon present also outside of these domains. Second, and related to this first observation, is the observation that dehumanization can vary in its blatancy (Haslam, 2014). According to Haslam, blatant dehumanization refers to when people directly report on the humanness of a specific group. For example, Bandura, Barbaranelli, Caprara, and Pastorelli (1996) measured the extent to which participants agreed or disagreed with statements such as ‘Some people deserve to be treated like animals’. Similarly, Esses et al. (2008) measured the extent to which participants perceived refugees as barbarians, in other words as lacking civility. In contrast, subtle dehumanization refers to when people indirectly report on the humanness of a specific group. A prime example for subtle dehumanization is research based on infra-humanization theory (Leyens et al., 2001). This research typically asks participants to attribute uniquely human emotions to ingroups versus outgroups. This form of

dehumanization is subtle because participants are not aware of the dehumanizing nature of the emotions they assign to the outgroups. Importantly, Haslam (2014) emphasizes that the subtle-blatant distinction of dehumanization should not be interpreted as a simple dichotomy, but rather as a continuum. For example, studies that use implicit measures of dehumanization to capture the strength of the mental association between the animal concept and the concept of a particular group (e.g., Goff et al., 2008; Medianu, 2010) are more likely to be found somewhere in between the ends of the subtle-blatant continuum. On the one hand, in these studies dehumanization is blatant because there are direct comparisons between outgroups and animals (through the use of human and animal related words or pictures as stimuli). On the other hand, in these studies dehumanization is also subtle because participants are unaware of what is being measured because of the use of implicit measures. Implicit measures, by creating conditions that make it difficult to deliberately base responses on specific beliefs and evaluation, bypass to a very large extent any form of conscious control and are, therefore, often considered to measure automatic responses.

To better understand the roots of dehumanization, past research also looked at the relationship between dehumanization and several individual difference variables as well as contextual variables. In terms of individual differences variables, past research found positive relationships between dehumanization and autism, narcissism, and interpersonal disgust-proneness (Gray et al., 2011; Hodson & Costello, 2007; Locke, 2009). Furthermore, past research showed that moral disengagement was positively associated with Machiavellianism and trait cynicism, and negatively associated with cognitive moral development, moral identity, moral idealism, empathetic concern, guilt, as well as honesty-humility, conscientiousness, and agreeableness (Cohen, Panter, Turan, Morse, & Kim, 2014; Detert, Trevino, & Sweitzer, 2008; Egan, Hughes, & Palmer, 2015; Ogunfowora & Bourdage, 2014). Other individual difference variables studied in the context of dehumanization are related to ideologies. For example, DeLuca-McLean and Castano (2009) showed that, in contrast to liberal Americans, only conservative Americans attributed fewer uniquely human emotions to a Hispanic hurricane victim. Similarly, Maoz and McCauley (2008) found that right-wing Israelis dehumanized Palestinians more than did left-wing Israelis. Finally, past research showed that social

dominance orientation, a person's preference for inequality among social groups (Pratto, Sidanius, Stallworth, & Malle, 1994), was positively associated with dehumanization (Esses et al., 2008; Trounson, Critchely, & Pfeifer, 2015). Besides these effects of different ideologies on dehumanization, research also investigated the link between national identity content and dehumanization and found that British participants who thought Britain was superior to other countries were more likely to attribute fewer uniquely human emotions to Americans compared to British participants who had positive views of their country without believing in its superiority (Viki & Calitri, 2008). In terms of contextual variables, past research examined the role of perceived threat in the dehumanization of others. For example, Maoz and McCauley (2008) found that Israeli participants who perceived Palestinians as a severe threat were more likely to dehumanize Palestinians. Overall, this body of research suggests that individual differences variables and contextual variables may help explain who may be more likely to dehumanize others and when individuals may be more likely to dehumanize others.

Past research that focused specifically on the dehumanization of refugees has investigated both a more blatant and a more subtle form of dehumanization. Esses et al. (2008) investigated the extent to which participants perceived refugees as failing to uphold prosocial values (Struch & Schwartz, 1989) and the extent to which participants perceived refugees to engage in enemy/barbarian acts (Alexander et al., 1999). These more blatant forms of dehumanization were found to lead to greater contempt and lack of admiration for refugees, which in turn were related to less favourable attitudes toward refugees and toward Canada's refugee policy. More recently, using the same dehumanization measures as Esses et al. (2008), Trounson and colleagues (2015) found that the more participants supported inequality among social groups the more likely they were to dehumanize asylum-seekers in Australia, which in turn was associated with increased negative emotions and attitudes toward asylum-seekers. To assess a subtler form of refugee dehumanization, Medianu (2010) developed a sequential priming procedure to assess the implicit association of refugees with animals as opposed to humans in comparison to Canadians. Across several studies, Medianu (2010) and Medianu and colleagues (2016) found that in comparison to Canadians, refugees were implicitly more likely to be associated with animals than humans.

The present research builds on this literature and aims to investigate whether implicit dehumanization, defined as the extent to which individuals implicitly associate refugees with animals as opposed to humans (Medianu, 2010), and explicit dehumanization, defined as the extent to which refugees are perceived to engage in enemy/barbarian acts (Alexander et al., 1999), predict behaviour. To this end, I will next review previous research that has focused on the behavioural consequences of dehumanization.

1.3 Behavioural Consequences of Dehumanization

While a significant amount of reasearch has focused on understanding and conceptualizing dehumanization, research on the behavioural consequences of dehumanization has been limited. There are, however, a few studies that looked at the relationship between dehumanization and prosocial and antisocial behaviour. In terms of prosocial behaviour, research has mostly focused on examining the behavioural consequences of a more subtle form of dehumanization. In particular, research has studied the behavioural consequences of infra-humanization (Leyens et al., 2000, 2007) in different contexts (Costello & Hodson, 2011; Cuddy, Rock & Norton, 2007; Vaes, Paladino, Castelli, Leyens, & Giovanazzi, 2003). First, Costello and Hodson (2011) found that participants who showed a strong preference for inequality among social groups and perceived immigrants as a threat to Canadian values and traditions were more likely to deny uniquely human emotions to immigrants, which in turn was associated with a lower willingness to offer aid to both fictitious and real immigrant groups. Second, using the lost e-mail paradigm, Vaes et al. (2003) investigated participants' responses to a request for help in a lost email, which was either written by an ingroup member or an outgroup member and which either contained an expression of a uniquely human or a non-uniquely human emotion. The researchers found that participants were more helpful and responded with more solidarity to ingroup members who expressed a uniquely-human emotion. At the same time, participants were also less friendly to outgroup members who violated expectations by expressing uniquely-human emotions. Furthermore, Cuddy et al. (2007) investigated the extent to which participants attributed uniquely human emotions to Black and White victims of Hurricane Katrina and found

that participants who dehumanized other-race victims were less likely to volunteer for relief efforts. Finally, Andrighetto and colleagues (2015) found that participants who explicitly dehumanized earthquake victims were less willing to help. This effect was explained by a reduction in empathy. Besides these negative effects of dehumanization on individual helping behaviour, research by Zebel, Zimmermann, Viki, and Doosje (2008) also documented a negative relationship between a more blatant form of dehumanization and collective helping behaviour. In particular, the researchers found that Dutch participants who dehumanized Muslims by associating them more with animal-related than human-related words were less likely to support reparation policies for Bosnian Muslim victims of an atrocity that Dutch peacekeepers had failed to prevent.

In terms of antisocial behaviour, research has investigated the behavioural consequences of both subtle and blatant forms of dehumanization. For example, research has shown that participants were more likely to administer high intensity shocks to a group of people who was blatantly described as an 'animalistic, rotten bunch' (Bandura, 1975, p. 258). Furthermore, research on dehumanization of women has shown that men who implcitly associate women with animals and objects have a higher proclivity to rape and sexually harass them (Rudman & Mescher, 2012). In the context of intergroup conflict and war, research has shown that Christians who blatantly dehumanized Muslims were more likely to self-report willingness to torture Muslim prisoners of war (Viki, Osgood, & Phillips, 2013). Similarly, Jackson and Gaertner (2010) found that Americans who perceived enemies as less than human were more likely to support war. Research also found that blatant dehumanization of others increased immediately after incidents of real intergroup violence (e.g., after the Boston Marathon bombings) and strongly predicted support for aggressive actions like torture and retaliatory violence (Kteily, Bruneau, Waytz, & Cotterill, 2015). Similarly, research conducted in the context of the 2016 U.S. Republican Primaries found that Americans who blatantly dehumanized Mexican immigrants and Muslims were more likely to support aggressive policies proposed by Republican nominees (Kteily & Bruneau, 2016). In the criminal justice context, research showed that people who dehumanized criminal offenders (Bastian, Denson, & Haslam, 2013) or sex offenders (Viki, Fullerton, Raggett, Tait, & Wiltshire, 2012) were more likely to support harsher punishments. Similarly, Goff et al. (2008)

investigated the portrayal of Black and White individuals convicted of capital crimes in Philadelphia and found that Black individuals were more likely to be portrayed in a dehumanizing way. Importantly, those individuals who were portrayed in a dehumanizing way were more likely to be executed by the state than those who were not. In a more recent study, Goff et al. (2014) found similar results regarding Black youth in the United States. In particular, the researchers found that the more police officers implicitly associated Blacks with apes the more likely they were to hold Black boys as responsible for their actions and to use force against them.

Overall, the reviewed research provides support for the negative behavioural consequences of dehumanization. However, with a few exceptions (e.g. Bandura, 1975; Goff et al., 2008, 2014), most of this research has focused on predicting people's intentions to engage in a behaviour and not actual behaviour. The present research attempts to fill this gap by investigating how implicit dehumanization of refugees is related to actual behaviour directed toward a refugee. In the following section, I will therefore briefly review a theoretical model that helps understand how social behaviour can be explained.

1.4 The Reflective-Impulsive Model of Social Behaviour

According to the reflective-impulsive model (RIM, Strack & Deutsch, 2004) there are two systems that jointly explain behaviour: the reflective and the impulsive system. In the reflective system, behaviour follows a decision process in which aspects of a situation are perceived and integrated into existing knowledge, knowledge about the value and the potential consequences of different behavioural options is weighted, and a decision is made that activates corresponding behavioural schemata. That is, behaviour is the result of reasoning and the formation of an intention. In the impulsive system, behavioural schemata are triggered without the need of an individual's intention. In particular, perceptual input directly activates elements in the associative network, and spread of activation leads to the activation of behavioural schemata. Importantly, the RIM assumes that both systems operate in parallel and that they have the potential to influence each other. However, while the impulsive system is always engaged in processing, the reflective system may be disengaged depending on the availability of cognitive resources.

That is, the model assumes that distraction as well as extremely high or low levels of arousal will interfere with the operation of the reflective system.

Importantly, these two processes are able to explain different aspects of behaviour in a social interaction. The reflective system is able to explain deliberate behaviour such as verbal behaviour (DePaulo & Friedman, 1998). For example, in an interaction with a refugee a person may deliberately change his or her verbal behaviour to appear friendly and unprejudiced. In contrast, the impulsive system is able to explain spontaneous behaviours that are not easily controlled during a social interaction. These include mostly nonverbal behaviours, such as eye gaze, body posture or interpersonal distance (Dovidio, Hebl, Richeson, & Shelton, 2006; Hebl & Dovidio, 2005).

Finally, the RIM (Strack & Deutsch, 2004) assumes that predictors of behaviour that are measured on the explicit level tap into the reflective system and are thus more likely to predict behaviours that are easily controlled, while predictors of behaviour that are measured on the implicit level tap into the impulsive system and are thus more likely to predict behaviours that are not easily controlled. This suggests that a person's nonverbal behaviour toward a refugee may be explained by the person's tendency to dehumanize refugees at an implicit, and not necessarily at an explicit, level and that a person's verbal behaviour toward a refugee may be explained by the person's tendency to dehumanize refugees at an explicit, and not necessarily at an implicit, level. Previous research on social interactions supports these predictions. For example, Dovidio, Kawakami, Johnson, Johnson, and Howard (1997) found that implicit prejudice toward Blacks was associated with increased negative nonverbal behaviour, but was unrelated to verbal behaviour during an interracial interaction. Similarly, research showed that implicit shyness (Asendorpf, Banse, & Mücke, 2002) and implicit anxiety (Egloff & Schmukle, 2002) manifested themselves in nonverbal behaviours during a social interaction. However, as mentioned earlier, to date, no research has looked at the effects of implicit and explicit dehumanization of refugees on nonverbal and verbal behaviour toward a refugee.

1.5 Present Research

The present research aims to examine the following main research question: Do implicit and explicit dehumanization of refugees predict nonverbal and verbal behaviour toward refugees? In particular, the present research aims to investigate the behavioural consequences of the dehumanization of refugees in a social interaction. This is important for several reasons. First, past research on the behavioural consequences of dehumanization has mostly focused on prosocial or antisocial behaviour (e.g., Bandura, 1975; Costello & Hodson, 2011; Cuddy et al., 2007; Goff et al., 2008, 2014; Vaes et al., 2003; Viki et al., 2013). Far less is known if and how dehumanization influences people's behaviour in a social interaction. Second, understanding if and how dehumanization may affect people's behaviour in a social interaction sheds light on the implications of dehumanization in everyday life. This is relevant given the current refugee crisis and the efforts made by many organizations and individuals involved in the integration of refugees. Finally, understanding the behavioural consequences of dehumanization in everyday life helps to put more weight on research efforts aimed at understanding the factors that cause and reduce dehumanization in everyday life.

The present research also addresses two subsidiary research questions that stem directly from the main research question. First, the present research also aims to examine whether implicit and explicit refugee dehumanization predict specific nonverbal behaviours that are indicative of anxiety or general uneasiness, such as self-touch and fidgeting (Ekman & Friesen, 1972), as well as specific nonverbal behaviours that are indicative of happiness and/or comfort (e.g., smiles, gestures; Ekman & Friesen, 1972; Ekman, Friesen, & Ellsworth, 1972; Izard, 1971). Second, the present research also aims to investigate whether implicit and explicit dehumanization of refugees predict how nonverbal and verbal behaviour as well as specific nonverbal behaviours that are indicative of anxiety or uneasiness change over time during a social interaction with a refugee.

To address all of these research questions, I conducted a complex study with a time intensive methodology. In the following section, which covers the main research question, I will describe the study in full detail. The subsequent two sections will cover

the subsidiary research questions. These questions are based on the data gathered from the same study.

Chapter 2

2 Research Question 1

To determine whether implicit and explicit dehumanization of refugees predict nonverbal and verbal behaviour toward refugees, I used Medianu's (2010) implicit measure of refugee dehumanization. Medianu's (2010) implicit measure of refugee dehumanization allows examining the extent to which participants are more likely to associate refugees with animals than humans in comparison to Canadians. It was hypothesized that, as in previous research (Medianu, 2010; Medianu, Sutter, & Esses, 2016), participants would be more likely to implicitly associate refugees with animals than humans compared to Canadians. Furthermore, it was hypothesized that implicit refugee dehumanization would be associated with less positive nonverbal behaviour toward refugees, but not toward Canadians, and that implicit refugee dehumanization would be unrelated to verbal behaviour toward refugees. Finally, it was also hypothesized that explicit refugee dehumanization would be associated with less positive verbal behaviour toward refugees, but not toward Canadians, and that explicit refugee dehumanization would be unrelated to nonverbal behaviour toward refugees.

As in previous research (Esses et al., 2008; Medianu, 2010; Medianu et al., 2016), the present research also examined whether implicit and explicit evaluation of refugees predict participants' nonverbal and verbal behaviour toward refugees. This was done to test whether similar or different results would be obtained compared to implicit and explicit dehumanization. Because previous research (Esses et al., 2008) has shown that the dehumanization construct cannot be reduced to just evaluations or attitudes per se, it was expected that the evaluation of refugees would be likely to produce different effects on behaviour than that shown for the dehumanization of refugees.

2.1 Method

2.1.1 Participants

In total 93 undergraduate students (64 female, 29 male) participated in this study for course credit. However, nine participants were excluded from the subsequent analyses due to technical issues in 'Study 2' (no video and/or audio material was recorded). Participants were between 17 and 24 years old (M = 18.46, SD = 1.10) and two thirds of participants were born in Canada. Of the 28 participants who were born outside of Canada, 18 were Canadian citizens. In terms of ethnic origin, the majority of participants were either from European (44.00%) or Asian origin (32.10%). Finally, in terms of political leaning, participants ranged from very liberal to very conservative. However, on average, participants reported being neither very liberal nor very conservative (M = 3.87, SD = 1.23).

2.1.2 General Procedure

The study was introduced to participants as two separate studies that were scheduled together to pool credits to attract more participants to come to the laboratory. To ensure credibility, two separate experimenters (both White) were used for the two supposedly separate studies.

Procedure 'Study 1'. The first study was described as a study about personality and perception. First, participants were asked to complete a visual task to presumably assess their perceptual skills. This visual task was a sequential priming task to assess implicit dehumanization of refugees (Medianu, 2010). Second, participants were asked to complete a questionnaire. This questionnaire included questions to assess participants' explicit dehumanization of refugees, participants' attitudes toward several groups (filler task with the exception of one item: explicit evaluation of refugees), as well as several individual difference variables (filler task, see measures for a detailed description). At the end of the questionnaire, participants were asked to provide demographic information. Finally, participants were thanked for their participation and instructed to wait for the second experimenter to proceed with the second study.

Measures 'Study 1'. The following measures were included in Study 1:

Implicit dehumanization and implicit evaluation of refugees and Canadians. Participants' tendency to implicitly dehumanize and evaluate refugees was assessed with the sequential priming procedure developed by Medianu (2010). Medianu developed a sequential priming paradigm that allows for a simultaneous assessment of participants' tendency to implicitly associate refugees and Canadians to animals and humans (to assess implicit dehumanization) and participants' tendency to implicitly associate refugees and Canadians to negative and positive evaluation (to assess implicit evaluation). Moreover, Medianu's sequential priming paradigm includes two types of categorization tasks: an evaluative task and a conceptual task. That is, Medianu's sequential priming paradigm asks half of participants to perform the evaluative task and the other half of participants to perform the conceptual task. In the evaluative task, participants are asked to categorize stimuli based on evaluation (positive or negative). In the conceptual task, participants are asked to categorize stimuli based on conceptual differences (animal or human). An advantage of including both types of tasks is to determine whether implicit dehumanization and implicit evaluation of refugees are independent of the categorization task. In other words, it allows examining whether participants' tendencies to implicitly associate refugees with animals or with negative evaluation are stable tendencies that are not easily influenced by the categorization task at hand.

In both conditions, the evaluative task condition and the conceptual task condition, participants were told that the purpose of the experiment was to investigate how people categorize pictures. First, all participants were exposed to sixteen practice trials with no preceding primes. In these practice trials the participants who performed the evaluative priming task were asked to indicate whether a given picture was positive or negative and pressed the left key as fast as possible if the picture was negative and pressed the right key if the picture was positive. The participants who performed the conceptual priming task were asked to indicate whether the same picture represented an animal or a human and pressed the left key as fast as possible if the picture was an animal and pressed the right key if the picture was human. The human pictures included pictures showing the upper body and face of either a white man or a white woman and varied in their evaluation. The positive human pictures included the emotions of happiness and

pride, and the negative human pictures included the emotions of sadness and anger (for the source of the pictures see Tracy et al., 2009). The animal pictures were pictures of insects and mammals and also varied in their evaluation. The positive animal pictures included a baby seal, a butterfly, a dragonfly, and a ladybug, and the negative animal pictures included a rat, a cockroach, worms, and a fly (see also Appendix B). During the practice trials, each picture was presented once. Each practice trial started with a warning signal (+++) for 500 ms, followed by a blank screen for 200 ms. Then the picture was presented at the centre of the computer screen. The distance from the participants' eyes to the centre of the screen was approximately 55 cm.

After the practice trials, participants were exposed to the critical trials with the primes. The primes included the word *refugee*, *Canadian* and a *no prime* condition. The primes appeared in bold 30 point Arial font letters in bright yellow colours on a black background (e.g., Deutsch, Gawronski, & Strack, 2006). Following in part Judd, Blair, and Chapleau's (2004) version of sequential priming, participants first viewed a fixation point (+++) for 500 ms. A prime then appeared for 200 ms, followed by a picture of a target object. Thus, the stimulus-onset asynchrony (the delay between the display onset of the prime and the target) was 200 ms. The inter-trial interval was 1000 ms. Each prime was paired three times with each picture (3x16x3 = 144 trials). Reaction times to categorize pictures preceded by primes or no primes were recorded. For a schematic description of the sequential priming procedure please see Tables 1 and 2.

Explicit dehumanization. Similar to Esses et al. (2008), this study assessed explicit dehumanization of refugees in terms of the extent to which refugees are perceived to engage in enemy/barbarian acts (Alexander et al., 1999). The enemy image subscale contains items that focus on perceptions of an outgroup as manipulative, opportunistic, evil, immoral, and motivated by self-serving interests. The barbarian image subscale includes items that focus on perceptions of an outgroup as ruthless, crude, unsophisticated, and willing to cheat to get its way. These subscales often load on the same factor and are thus combined (Alexander, Brewer, & Livingston, 2005). The enemy/barbarian scale of explicit dehumanization consisted of twelve items that were rated on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). A sample

item is ‘Refugees are crude, unsophisticated, and willing to cheat to get their way’. The scale computed as the average of the items had a very good internal consistency (Cronbach’s $\alpha = .93$). Finally, participants’ average scores for explicit refugee dehumanization were computed so that higher values indicate increased explicit dehumanization.

Table 1
Sequential Priming Procedure – Practice Trials

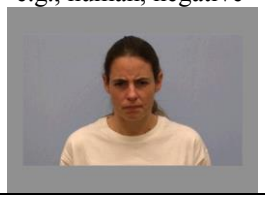
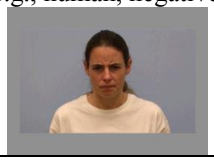
Trial	Screen	Exposure	Categorization Task
1	(+++)	500 ms	
	Blank screen	200 ms	
	Exposure to a picture e.g., animal, negative 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
2	(+++)	500 ms	
	Blank screen	200 ms	
	e.g., animal, positive 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
3	(+++)	500 ms	
	Blank screen	200 ms	
	e.g., human, negative 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
4	(+++)	500 ms	
	Blank screen	200 ms	
	e.g., human, positive 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
etc.	... until all 16 pictures have been randomly presented once.		

Table 2
Sequential Priming Procedure – Critical Trials

Trial	Screen	Exposure	Categorization Task
1	(+++)	500 ms	
	Prime: e.g., Refugee	200 ms	
	Exposure to a picture e.g., animal, negative 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
2	(+++)	500 ms	
	Prime: e.g., Canadian	200 ms	
	e.g., animal, positive 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
3	(+++)	500 ms	
	Prime: e.g., Blank screen	200 ms	
	e.g., human, negative 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
4	(+++)	500 ms	
	Prime: e.g., Canadian	200 ms	
	e.g., human, positive 	RT	Evaluative condition: Negative or Positive? **OR** Conceptual condition: Animal or Human?
	Break	1000 ms	
... until all 16 pictures have been randomly presented three times with each prime (3x16x3 = 144 trials in total).			

Note. Differences between the practice and critical trials are marked in red.

Please note that with the exception of the demographic questions and the explicit evaluation of refugees, the following measures used in the first study were simply included as filler questions.

Explicit evaluation of a variety of groups. Participants indicated their attitudes toward a variety of groups (e.g., refugees, vegetarians, homosexuals and immigrants) on an 'attitude thermometer' (Esses et al., 1993). Participants reported the extent to which they have unfavourable versus favourable attitudes toward several groups on a scale from 0 to 100 degrees. That is, higher values for explicit evaluation reflect more positivity.

Big Five Inventory. Participants filled out the short version of the Big Five Inventory (BFI-10, Rammstedt, & John, 2007). The BFI-10 consists of 10 items that were rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). A sample item is, 'I see myself as someone who is outgoing, sociable.'

Self-monitoring. Self-monitoring was measured with the 18 items developed by Snyder and Gangestad (1986). For each item, participants reported whether it applied to them by selecting 'true' or 'false' as an answer. A sample item is, 'At parties and social gatherings, I do not attempt to do or say things that others will like'.

National identification. Participants' national identification with Canada was measured using the 16-item questionnaire from Cameron (2004). Participants were asked to indicate to what extent they agreed with items such as, 'I feel strong ties to other Canadians' on a scale ranging from '1 = strongly disagree' to '7 strongly agree'.

Motivation to control prejudice. Motivation to control prejudice was assessed with Dunton and Fazio's (1997) 17-item questionnaire. Participants were asked to indicate to what extent they agree with each item on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). A sample item is, 'It's never acceptable to express one's prejudices'.

Demographics. Information about participants included age, gender, ethnic or cultural origin, country of birth (Canada or other), citizenship, native language, and political leaning.

Procedure 'Study 2'. The second study was described as a study about social relationships with the aim to investigate the acquaintance process among university students. Participants were told that they would interact with another participant (who

turned out to be a female confederate who was Asian). Prior to the interaction, however, participants were asked to write a short bio about themselves that would presumably be given to the other participant before their meeting. In particular, participants were asked to write a bio containing the following information: name, country of origin / home country and hometown, university major, their impressions about student life at Western, their professional goals, and their hobbies. After writing their own bio, participants received a bio, which the other participant (the confederate) had allegedly written in the meantime. This bio was used to induce the two experimental conditions. That is, the bio either described the other participant as a refugee who came to Western through the student refugee program from the World University Service of Canada or as a Canadian student (see Appendix C for complete bio).

After reading the bio, participants were led to another room where the interaction took place. Upon entering the room, participants encountered a chair with a backpack on its side to indicate that the other participant (the confederate) was sitting there. Participants were then informed that the other participant (the confederate) had to step out for a quick moment, but that she would be back shortly. In the meantime, participants were instructed to take a seat on the other chair. Both chairs were positioned exactly opposite from each other. Importantly, the distance between both chairs was also standardized and measured 110 cm to reflect a comfortable seating distance (Sommers, 1962). According to Patterson (1973), people tend to strive to maintain a point of equilibrium in their nonverbal expression of intimacy. That is, once one aspect of a person's nonverbal expression of intimacy is changed, such as the seating distance, the person is more likely to engage or disengage in other nonverbal behaviours (e.g., eye contact or body lean) to restore equilibrium. Therefore, the seating distance was standardized to control for any systematic variability in participants' nonverbal behaviours due to varying seating distances. Once the participant took a seat, the experimenter informed the participant that while they were waiting for the other participant (the Asian confederate) to come back they would do a quick video and sound check to make sure that everything was working properly. For this purpose, the experimenter asked an assistant (another female confederate who was White) to take the seat of the other participant temporarily and asked the assistant and the participant to talk

about a travel destination that they would like to visit. This procedure was not done to actually test the video and audio system, but to videotape participants' behaviour toward another person, which was used as a baseline measure for each participant in the analyses.

Finally, once the video and sound check was completed, the other participant (the Asian confederate) entered the room and took a seat. To stimulate the conversation, participants were first given a simple warm-up exercise (talk about where they live – on or off campus) and then, for the main interaction, four easy to talk about questions that had been successfully employed in previous research (Aron, Melinat, Aron, Vallone, & Bator, 1997; see also Appendix D). Once the participants had finished talking about these questions, the experimenter led them to two separate rooms to fill out a questionnaire regarding their impressions of their interaction partner and the quality of the interaction. Next, participants were asked about the purpose of the study to probe for any suspicions regarding the cover story of the study. Finally, portrayed as a request for feedback on the performance of the experimenter and the assistant during the video and sound check, participants were asked to also provide their impressions of the assistant's behaviour during the interaction and the quality of that interaction. After that, participants were fully debriefed and thanked for their participation.

Importantly, the confederates were blind to the conditions of the study and followed during the interaction a set of responses provided to them to reduce unsystematic variability across participants' interactions (see Appendix D for the confederate response scripts). All interactions were videotaped using a split screen method for later coding (see section on thin slice coding below for a detailed description). One camera was positioned behind the participant's chair and directed toward the confederate's chair. Another camera was located behind the confederate's chair and directed toward the participant's chair.

Measures 'Study 2'. In the second study, after the interaction, participants as well as both confederates completed the following measures to capture their impressions of each other and the interaction. Please note that these measures, with the exception of

the manipulation check questions, are not relevant to my research questions and were only included to maintain the cover story and to probe for any suspicions regarding the true aim of the study.

Behaviour ratings. On a scale ranging from 1 (= not at all) to 7 (= extremely), participants and both confederates were asked to indicate the extent to which their interaction partner was 'unfriendly', 'pleasant', 'unlikeable', 'cold', 'cruel' and 'polite'. The first five items were based on Dovidio et al. (2002). The last item, polite, was added to the list to provide an additional positive behavioural rating.

Quality of the interaction. To assess the perceived quality of the interaction, participants and both confederates were asked to fill out four questions designed for this study. In particular, participants and confederates were asked to indicate how enjoyable the interaction was, how well they got along, provide their impressions on the extent to which they had a good rapport and provide their opinion on the extent to which they thought that they could be good friends with their interaction partner outside the lab. The scales ranged from 1 to 7 (e.g., 1 = not at all to 7 = extremely or 1 = not at all likely to be friends to 7 = very likely to be friends).

Manipulation check. Participants answered the following open-ended questions: 'What did you think when you read the bio of your interaction partner?', 'How did you picture your interaction partner?', 'Do you have any comments about your interaction with the other student?', and 'What was the purpose of this study?'. The main goal of these questions was to assess whether participants suspected that the bios were not real and/or whether participants suspected that the aim of the study was to examine how people interact with refugees.

2.2 Results

2.2.1 Manipulation Check

In total, eight participants suspected that the bio in the refugee condition was not real and/or indicated that the purpose of the study was to examine how people interact with refugees. These eight participants were excluded from the subsequent analyses. The final

sample for data based on coding of video material consisted of 79 participants, and the final sample for data based on coding of audio material consisted of 76 participants.

2.2.2 Data Aggregation for Implicit Dehumanization and Implicit Evaluation

The focus of the analysis was on participants' reaction times to the 144 trials in which word primes (refugee, Canadian, or no prime) were immediately followed by picture targets (animal, human, positive or negative). In order to analyse the data, I first excluded the reaction times for error trials (incorrect categorization of the targets; less than 5% of all responses) and the reaction times outside the 300 – 1000 ms time interval (less than 10% of all responses). Next, based on the valid reaction times of the participants to the targets, I calculated scores for implicit dehumanization and implicit evaluation as follows.

First, to assess dehumanization, I calculated the facilitation scores. That is, I calculated the difference in reaction time (RT) responses to the same target as a function of primes according to Medianu's (2010) procedure. The facilitation scores were calculated as follows: Refugee-Animal Association = RT (no prime, animal) – RT (Refugee, animal); Canadian-Animal Association = RT (no prime, animal) – RT (Canadian, animal); Refugee-Human Association = RT (no prime, human) – RT (Refugee, human); and Canadian-Human Association = RT (no prime, human) – RT (Canadian, human). Next, I calculated the dehumanization scores, that is, the difference between animal facilitation scores (subsequently referred to as animal associations) and human facilitation scores (subsequently referred to as human associations). Specifically, I calculated two separate dehumanization scores based on whether the prime 'refugee' or the prime 'Canadian' was used. The dehumanization scores were calculated as follows: Refugee Dehumanization = Refugee-Animal Association – Refugee-Human Association; Canadian Dehumanization = Canadian-Animal Association – Canadian-Human Association. By calculating the scores for Refugee Dehumanization, I was able to determine the extent to which the prime refugee facilitated participants' reaction to the animal target versus the human target. If people had a stronger mental association between refugees and animals, then the prime refugee should have facilitated the

participants' reaction to the animal targets more than to the human targets. By calculating the score for the Canadian Dehumanization category, I was able to determine the extent to which the prime Canadian facilitated the participants' reaction to the animal targets versus human targets. If people had a stronger mental association between Canadians and animals, then the prime Canadian should have facilitated the participants' reaction to the animal targets more than to the human targets. Overall, higher values for implicit dehumanization indicate more dehumanization. For a schematic description of these calculations please see Appendix K.

The evaluation scores were calculated in a similar way to the dehumanization scores. The Refugee Evaluation scores and Canadian Evaluation scores were calculated as follows: Refugee Evaluation = [RT (no prime/negative – refugee/negative) – RT (no prime/positive - refugee/positive)]; Canadian Evaluation = [RT (no prime/negative – Canadian/negative) – RT (no prime/positive – Canadian/positive)]. By calculating the scores for Refugee Evaluation, I was able to determine the extent to which the prime refugee facilitated the reaction to the negative targets versus the positive targets. If people have a stronger mental association between refugees and negative evaluation, then the prime refugee should facilitate the participants' reaction to the negative targets more than to the positive targets. By calculating the scores for Canadian Evaluation, I was able to determine the extent to which the prime Canadian facilitated the reaction to the negative targets versus positive targets. If people have a stronger mental association between Canadians and negative evaluation, then the prime Canadian should facilitate the participants' reaction to negative targets more than to positive targets. Overall, higher values for implicit evaluation indicate more negativity. For a schematic description of these calculations please see Appendix K.

Please note that the implicit dehumanization and the implicit evaluation scores are based on facilitation scores. That is, they are based on calculations that indicate the extent to which a prime *facilitated* a participant's reaction to an animal or a human picture or to a negative or a positive picture. However, in the following pages I will use the terms implicit dehumanization and implicit evaluation without explicitly referring to the facilitation scores. For example, I will talk about the extent to which the primes

('refugee' and 'Canadian') were associated with animals or humans instead of talking about the extent to which the primes ('refugee' and 'Canadian') facilitated the categorization of animal pictures as 'animal' and the categorization of human pictures as 'human'.

Finally, please note that regardless of the fact that half of the participants performed the conceptual task and the other half of the participants performed the evaluative task, all participants have, based on the calculations mentioned above, scores reflecting implicit dehumanization and implicit evaluation. This is because all participants were exposed to the same primes (no prime, refugee or Canadian) and targets (positive human picture, negative human picture, positive animal picture or negative animal picture). The purpose of the different tasks was to see whether implicit dehumanization is or is not conditional on the nature of the categorization task.

2.2.3 Implicit and Explicit Dehumanization

To test whether participants are more likely to implicitly associate refugees with animals than humans compared to Canadians and to test whether this effect is independent of the categorization task, I conducted a 2 (target group: refugees or Canadians) x 2 (type of categorization task: conceptual or evaluative) mixed model ANOVA, with target group as a within-subject factor and type of categorization task as a between-subject factor. The results showed a main effect of target group, $F(1, 77) = 6.86$, $p = .01$, $\eta^2 = .08$, and a main effect of task, $F(1, 77) = 6.01$, $p = .02$, $\eta^2 = .07$. These main effects were, however, qualified by a significant interaction effect, $F(1, 77) = 7.41$, $p = .01$, $\eta^2 = .09$. Participants were more likely to dehumanize refugees than Canadians in the conceptual categorization task condition (refugees: $M = 6.34$, $SD = 38.31$[1]; Canadians: $M = -18.52$, $SD = 46.99$; $F(1, 77) = 10.77$, $p = .002$, $\eta^2 = .12$), but not in the evaluative categorization task condition (refugees: $M = 15.64$, $SD = 45.81$; Canadians: $M = 16.12$, $SD = 46.50$; $F(1, 77) = .93$, $p = .34$, $\eta^2 = .01$[2]). Finally, in regards to explicit dehumanization of refugees, on average, participants tended to perceive refugees as engaging in enemy and barbaric acts ($M = 4.60$, $SD = 1.14$).

2.2.4 Implicit Evaluation and Explicit Evaluation of Refugees

To test whether participants are more likely to implicitly associate refugees with negative than positive evaluation compared to Canadians and to test whether this effect is independent of the categorization task, I conducted a 2 (target group: refugees or Canadians) x 2 (type of categorization task: conceptual or evaluative) mixed model ANOVA, with target group as a within-subject factor and type of categorization task as a between-subject factor. The results revealed no significant main effect of target group, $F(1,77) = 1.46$, $p = .23$, $\eta^2 = .02$. While participants tended to associate refugees ($M = 11.47$, $SD = 47.75$) more with negative than positive evaluation compared to Canadians ($M = 4.88$, $SD = 46.52$), this difference was not significant. Furthermore, the results showed a significant main effect of task, $F(1,77) = 13.28$, $p = .00$, $\eta^2 = .15$, and a non-significant interaction effect between target group and categorization task, $F(1,77) = .56$, $p = .46$, $\eta^2 = .01$. Participants were more likely to associate both target groups with negativity in the conceptual categorization task condition ($M = 23.69$, $SD = 44.62$) than in the evaluative categorization task condition ($M = -7.33$, $SD = 44.60$). Finally, in regards to the participants' explicit evaluation of refugees, on average, participants reported neither a very unfavourable nor very favourable attitude toward refugees ($M = 58.04$, $SD = 21.00$).

Coding of the interaction. For efficiency, 'thin slices' of all interactions were extracted from each participant's audio and video file for coding. Thin slices are 'random samples of the behavioral stream, less than five minutes in length, that provide information regarding personality, affect, and interpersonal relations' (p. 271, Ambady, Bernieri, & Richeson, 2010). Several studies have used this method of behavioural coding analysis (e.g. Ambady & Rosenthal, 1993; Ambady & Weisbuch, 2010; Richeson & Shelton, 2005). Moreover, meta-analytic research suggests that ratings of thin slices under 30 seconds are accurate when compared to both objective criteria or to ratings given by experts (Ambady & Rosenthal, 1992). Additionally, thin slice length (i.e., under 30s vs. 5min) and behavioural channel (i.e., video vs. audio) do not seem to be significantly related to the accuracy of thin slice judgments (Ambady & Rosenthal, 1992). Several studies have used thin slices to do behavioural coding and have found

significant correlations between the coded behaviours and other variables, providing support for the validity of the thin-slice method (Ambady et al., 2000; Celano, 2013; Roter, Hall, Blanch-Hartigan, Larson, & Frankel, 2011). Furthermore, studies have used thin slices to examine relationships between coded behaviour and other constructs, such as personality (Borkenau, Mauer, Riemann, Spinath, & Angleitner, 2004), intergroup bias (Richeson & Shelton, 2005), interpersonal skills (Ambady, Krabbenhoft, & Hogan, 2006), and trustworthiness (Kaul & Schmidt, 1971).

Selection of thin slices. The interactions lasted approximately six to ten minutes. The video material was cut into five smaller sequences of 10 seconds each. The first sequence (= time point 1, T1) consisted of the first 10 seconds of participants' interaction with the White confederate. As mentioned, this sequence was used as a baseline measure. The second sequence (T2) comprised the first 10 seconds of participants' interaction with the Asian confederate during the warm-up exercise. The third (T3), fourth (T4) and fifth (T5) sequence consisted of 10 seconds at the beginning, middle and end of participants' main interaction with the Asian confederate. Since the duration of the interactions was not the same for all participants, the beginning of the main interaction was defined as the moment in which participants started discussing the first question of the main interaction. The end of the main interaction was defined as the moment in which participants (and the confederate) had no further comment on the final question of the main interaction. Finally, the middle of the main interaction was defined in relation to the beginning and the end of the main interaction. That is, the middle of the main interaction was defined as the five seconds before and the five seconds after exactly half of the main interaction had passed. In total, I cut five clips of 10 seconds for each participant. These clips were then coded by four undergraduate research assistants. First, three coders reviewed all available thin slices just based on the visual information, that is without any sound. Then, two of the first three coders and an additional new coder[3] reviewed all available thin slices just based on audio information, that is without any visual information. The separate coding of visual and audio information allowed for separate analyses of participants' nonverbal and verbal behaviour. The coders provided ratings for all available thin slices over the course of four to five weeks for the visual coding and over the course of four weeks for the audio coding. Coders reviewed thin slice files individually. All coders remained naïve

to the experimental condition of each participant and were also unaware of the purpose of the study.

Thin slice ratings. To assess how positive participants' behaviour was during the interaction, all coders rated each thin slice on seven adjectives used in previous research (Celano, 2013; Dovidio et al., 1997). On a scale from 1 (strongly disagree) to 7 (strongly agree), coders indicated the extent to which participants behaved in a 'pleasant', 'cruel' (reverse coded), 'unfriendly' (reverse coded), 'unlikeable' (reverse coded), 'cold' (reverse coded), 'engaging' and 'anxious' (reverse coded) way. To assess the positive nature of the interaction, all coders indicated on a scale from 1 (strongly disagree) to 7 (strongly agree) the extent to which they thought that the interaction was 'natural', 'enjoyable', 'awkward' (reverse coded) and 'uncomfortable' (reverse coded; Celano, 2013; Dovidio et al., 1997). Finally, again using the same scale, all coders were asked to assess the overall quality of the interaction by indicating the extent to which they agreed that the interaction was 'positive overall' and 'negative overall'. All coders were instructed to watch (video coding) or listen (audio coding) to each clip only once and then to provide ratings based on their 'gut feeling' or 'intuitive judgment' consistent with the literature on thin slice coding (Ambady, 2010). Besides this, participants only received a short list with definitions for each adjective based on previous research (Celano, 2013; see Appendix E). No other instructions were provided.

All coders expressed difficulties in coding participants' behaviour as 'cruel' regardless of whether the coding was based on visual or audio information. In fact, all coders consistently strongly disagreed with the statement that participants behaved in a cruel way. As a result, the item had no variance and was dropped from all subsequent analyses. Furthermore, the coders who did the coding based on visual information did not agree at all in regards to how 'natural' the interaction was (ICCs: -.02 to .36). Therefore, the item 'natural' was excluded for all analyses based on video coding[4].

For statistical analyses, I calculated an average score for 'positive behaviour' based on the remaining six items (pleasant, unfriendly, unlikeable, cold, engaging and anxious) so that higher values indicate more positive behaviour. Similarly, I calculated an

average score for 'positive interaction' based on the remaining three items (video coding: enjoyable, awkward and uncomfortable) or all four items (audio coding: natural, enjoyable, awkward and uncomfortable) so that higher values indicate a more positive interaction. Internal consistencies among items of each average score were adequate to high within video thin slices (Cronbach αs = .50 to .95) and audio thin slices (Cronbach αs = .52 to 85) at each time point for each individual coder.

Intraclass correlation coefficients showed adequate to strong levels of agreement among coders for the average positive behaviour and positive interaction scores at each time point for video coding (ICCs = .50 to .82) and audio coding (ICCs = .54 to .87, see Table 3). Therefore, the three coders' scores were averaged for these dependent variables at each time point. Also, intraclass correlation coefficients showed low to adequate levels of agreement among coders for the overall positivity and overall negativity scores at each time point for video coding (ICCs = .49 to .70) and for audio coding (ICCs = .03 to .67). Since the lowest agreement was found for overall negativity at T2, and my analyses will only focus on T1 (the baseline measure) and T3, T4 and T5 (the main interaction), I decided to average the three coders' scores for overall positivity and negativity at each time point. However, the results will have to be interpreted more carefully due to the lower reliability of the scores.

Table 3
Intraclass Correlation Coefficients For All Dependent Variables For Each Time Point

	T1	T2	T3	T4	T5
Video coding					
Positive behaviour	.82	.75	.74	.74	.75
Positive interaction	.56	.50	.55	.54	.58
Overall positivity	.70	.53	.54	.66	.59
Overall negativity	.68	.49	.51	.55	.70
Audio coding					
Positive behaviour	.54	.60	.62	.70	.66
Positive interaction	.55	.54	.55	.76	.58
Overall positivity	.48	.39	.54	.67	.60
Overall negativity	.22	.03	.30	.50	.30

Finally, for the analyses regarding my first research question I was not interested in investigating participants' change in verbal and nonverbal behaviour during the main

interaction (this will be relevant for my second research question), but rather in their behaviour across the entire main interaction. Therefore, I decided to average each participant's score for T3, T4 and T5. The average scores (T345) for verbal and nonverbal positive behaviour for each participant during the main interaction had good and very good reliabilities across dependent variables (Cronbach αs = .76 to .92).

2.2.5 Analytic Method for Analyses of Nonverbal and Verbal Behaviour

Similar to previous research on behaviour during interracial interactions (Dovidio et al., 1997; Dovidio et al., 2002), the present research aimed to explore how a participant's behaviour changes in comparison to his/her baseline behaviour and how this intraindividual change can be explained by implicit dehumanization. To capture each participant's change in behaviour, I used a latent difference score (LDS) model (McArdle, 2009) instead of regular difference scores (subtracting a participant's baseline behaviour from the behaviour in question). While difference scores are intuitively appealing and easy to compute (Willet, 1997), some researchers have argued that they have several methodological shortcomings (Cronbach & Furby, 1970; Linn & Slinde, 1977). First, difference scores may suffer from low reliability and thus undermine the valid representation of true change (Cronbach & Fury, 1970). Second, difference scores tend to correlate with the initial scores, that is, the baseline measure (Linn & Slinde, 1977). For example, according to Linn and Slinde, a negative correlation between the baseline measure and the change score would result in an advantage for people with low baseline scores, because people with low baseline scores will show change more rapidly than those with high baseline scores. The LDS model (McArdle, 2001), in contrast, uses SEM to address the above-mentioned shortcomings of difference scores by modelling true intraindividual change as a latent factor and by also modelling the correlation typically observed between the baseline measure and the latent change score (see also Appendix G for a sample model).

To test whether implicit dehumanization predicts participants' intraindividual change in behaviour, I ran a LDS model in which I included implicit refugee dehumanization and type of interaction partner (refugee versus Canadian) as well as the

interaction term between implicit refugee dehumanization and type of interaction partner as predictors of the latent change score (see Appendix G for a sample model). Furthermore, due to the unexpected finding that implicit dehumanization of refugees in comparison to Canadians is conditional on the type of categorization task of the sequential priming procedure, I decided to include type of categorization task and the respective interaction terms with implicit dehumanization and type of interaction partner (refugee versus Canadian) as additional predictors of the latent change score. However, for ease of interpretation, in the results section I will report any effects of type of categorization task in footnotes and not in the main text.

Finally, to test whether the implicit evaluation of refugees and Canadians predicts participants' intraindividual change of behaviour, I followed the same procedure outlined above using implicit evaluation instead of implicit dehumanization. That is, I ran a LDS model in which I included implicit evaluation of either refugees or Canadians and type of interaction partner (refugee versus Canadian) as well as the interaction term between implicit evaluation of either refugees or Canadians and type of interaction partner as predictors of the latent change score. Since implicit evaluation was unconditional on the type of categorization task, I did not include categorization task as an additional predictor of the latent change scores.

The analyses were conducted with Mplus 7.0 (Muthén & Muthén, 2012) using maximum likelihood estimation. For each of the tested models I report the model chi-square statistic, the root-mean-square error of approximation with its 90% confidence interval (RMSEA), and the comparative fit index (CFI) to assess model fit. According to Kline (2011), a non-significant chi-square statistic indicates that the model is consistent with the covariance data. Smaller RMSEA values indicate better model fit, with values less than .05 indicating a 'close fit,' whereas RMSEA values larger than .10 suggest a 'poor fit' (Browne & Cudeck, 1989, 1993). The CFI indicates the relative improvement in the model fit when comparing the target model relative to a baseline (independence) model (Kline, 2011). CFI values greater than .90 indicate a good fit of the model to the observed data.

2.2.6 Descriptive Results for Nonverbal and Verbal Behaviour

The results showed that raters' coding of participants' nonverbal behaviour as well as their coding for the quality of the interaction based on nonverbal behaviour were on average relatively positive for the baseline measure and for the main interaction (*M* = 3.97 to 5.01, *SD* = .74 to 1.09 for positive behaviour, positive interaction and overall positivity; and *M* = 3.30 and 3.58, *SD* = .97 and 1.13 for overall negativity, see also Appendix H for detailed means, standard deviations and correlations between these variables). Furthermore, raters' coding of participants' verbal behaviour as well as their coding for the quality of interaction based on verbal behaviour were on average very positive for the baseline measure and for the main interaction (*M* = 4.76 to 5.79, *SD* = .40 to .61 for positive behaviour, positive interaction and overall positivity; and *M* = 1.94 and 2.36, *SD* = .45 and .56 for overall negativity, see also Appendix J for detailed means, standard deviations and correlations between these variables).

Furthermore, across all tested latent change score models, the latent change scores showed that participants' nonverbal behaviour was more positive during the main interaction with the Asian confederate than during the interaction with the White confederate, which served as a baseline measure (intercepts of latent change scores for positive behaviour, positive interaction and overall positivity ranged from .355 to .841, *p* = .00 to .01, and for overall negativity from -.514 to -.379, *p* = .00 to .02, see also Tables 1 to 12 in the Annex). The opposite was true for participants' verbal behaviour. That is, participants' verbal behaviour was more positive during the baseline interaction than the main interaction (intercepts of latent change scores for positive behaviour, positive interaction and overall positivity ranged from -.456 to -.181, *p* = .00 to .03, and for overall negativity from .384 to .472, *p* = .00, see also Tables 13 to 24 in the Annex). For the following analyses, however, I will not be interested in the absolute differences between participants' behaviour during the baseline and main interaction. Much more important will be to examine whether the size of these differences varies depending on participants' implicit and explicit refugee dehumanization scores and the experimental condition (participants were made to believe that their interaction partner was either a refugee or a Canadian student). In the following section I will therefore concentrate on

the relative differences and not the absolute differences. For ease of expression, I will always talk about less (or more) positive behaviour and a less (or more) positive interaction meaning that, for example, while perhaps on an absolute level participants' nonverbal behaviour is always more positive toward the Asian confederate than to the White confederate, this difference may be smaller (or larger) depending on participants' implicit refugee dehumanization score and on whether they believe that the Asian confederate is a refugee or a Canadian student.

2.2.7 Nonverbal Behaviour

Implicit Measures. To test whether implicit refugee dehumanization predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 1 and 2 in the Annex for detailed model results). With the exception of the model for overall positivity (X^2 (7) = 13.12, p = .07; RMSEAs = .105; CFIs = .750), all models had a good model fit (X^2 (7) = 7.05 to 8.69, p = .28 to .42; RMSEAs = .010 to .055; CFIs = .959 to .998)[5]. The results revealed a significant or a marginally significant effect of type of interaction partner on positive behaviour (b = -.337, p = .05), positive interaction (b = -.516, p = .01), and overall negativity (b = .410, p = .09). Participants displayed less positive nonverbal behaviour when interacting with a refugee than when interacting with a Canadian student. Moreover, participants' interaction with a refugee was less positive and overall more negative than participants' interaction with a Canadian student.

Furthermore, the results showed significant or marginally significant interactions between the type of interaction partner (refugee versus Canadian) and implicit refugee dehumanization on positive behaviour (b = -.007, p = .05), positive interaction (b = -.008, p = .07) and overall negativity (b = .011, p = .03). Starting with positive behaviour, although the simple slope for the relationship between implicit refugee dehumanization and positive behaviour was not significant in the refugee condition (b = -.003, p = .33) and marginally significant in the Canadian condition (b = .004, p = .07), the results showed that participants with higher refugee dehumanization scores displayed less positive behaviour toward the refugee than toward the Canadian student (see Figure 1). In

other words, the difference in positive behaviour toward the refugee and the Canadian student increased as participants' scores for implicit refugee dehumanization increased.

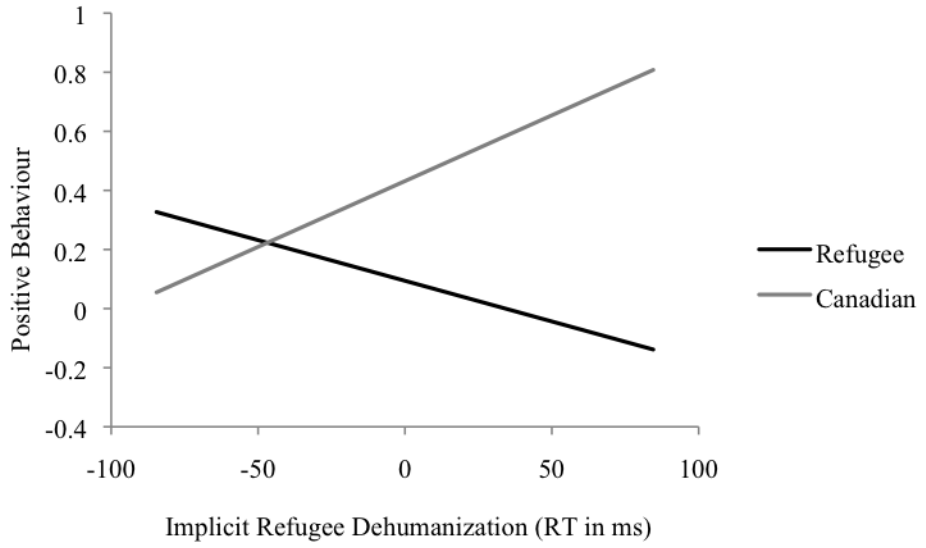


Figure 1. Interaction effect between type of interaction partner and implicit refugee dehumanization on positive behaviour (based on video coding)

To examine at what point of the implicit refugee dehumanization continuum the difference in positive behaviour toward the refugee and the Canadian student becomes significant, I generated the graph displayed in Figure 2. The graph shows the difference in positive behaviour between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score as well as the 95% confidence interval for this effect. As can be seen in Figure 2, the difference in positive behaviour between the refugee and the Canadian condition is significant (the confidence interval does not include zero, see also red arrow) when implicit refugee dehumanization scores are approximately zero or higher.

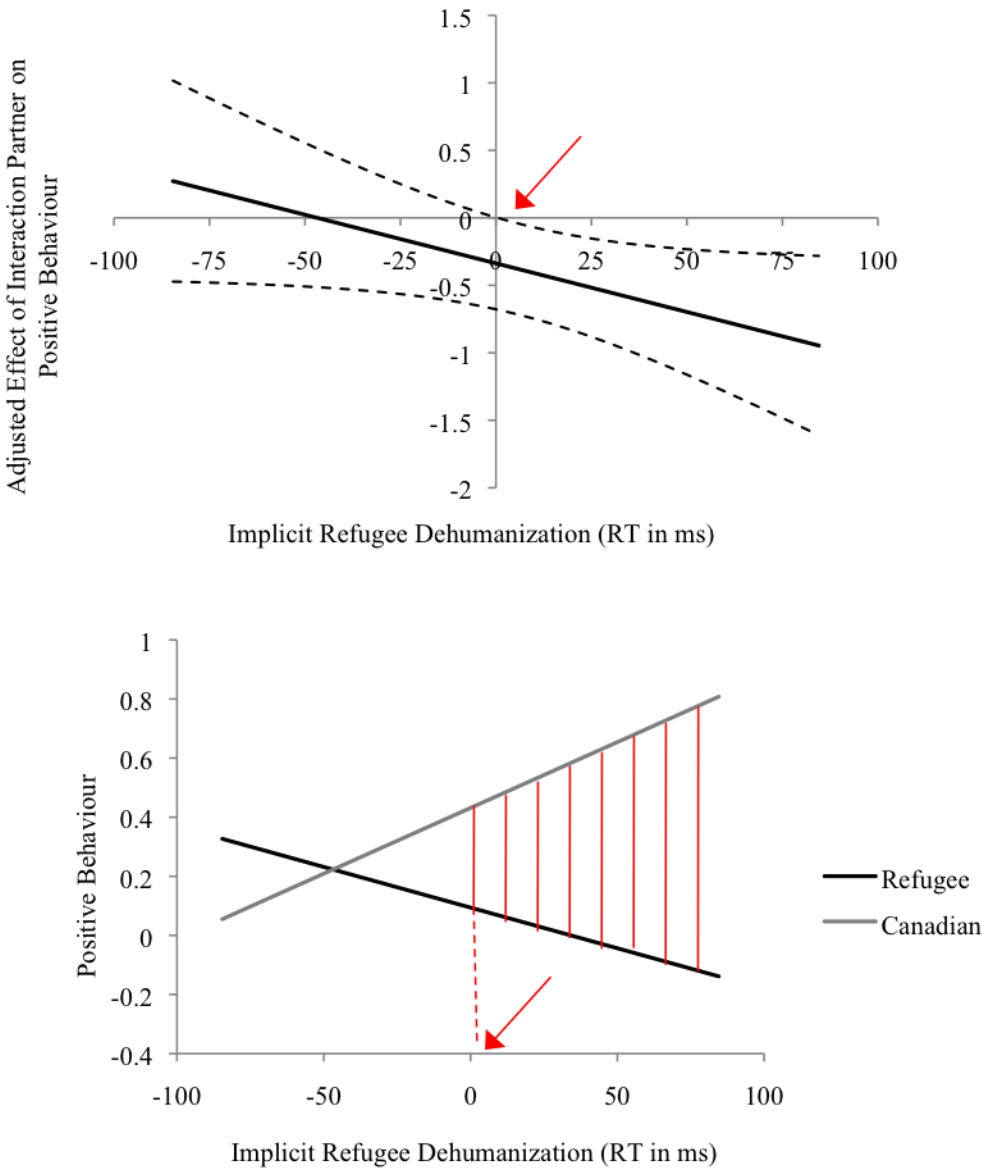


Figure 2. Top: Difference in positive nonverbal behaviour scores (based on video coding) between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score (dashed lines represent 95% confidence intervals); Bottom: Figure 1 with highlighted area indicating significant differences between the regression lines.

The interaction effects between type of interaction partner (refugee versus Canadian) and implicit refugee dehumanization on positive interaction and overall negativity showed a similar pattern (see Figures 3-6). While the simple slopes for each of these interaction terms were not significant in the refugee condition (b = -.003 and .000,

p = .36 and .90) and significant or marginally significant in the Canadian condition (*b* = .005 and -.011, *p* = .09 to .001), the difference in positive interaction scores and overall negativity between the refugee and Canadian conditions was significant for participants with higher implicit refugee dehumanization scores (see Figures 4 and 6). The interaction was less positive and overall more negative only when participants had higher implicit refugee dehumanization scores.

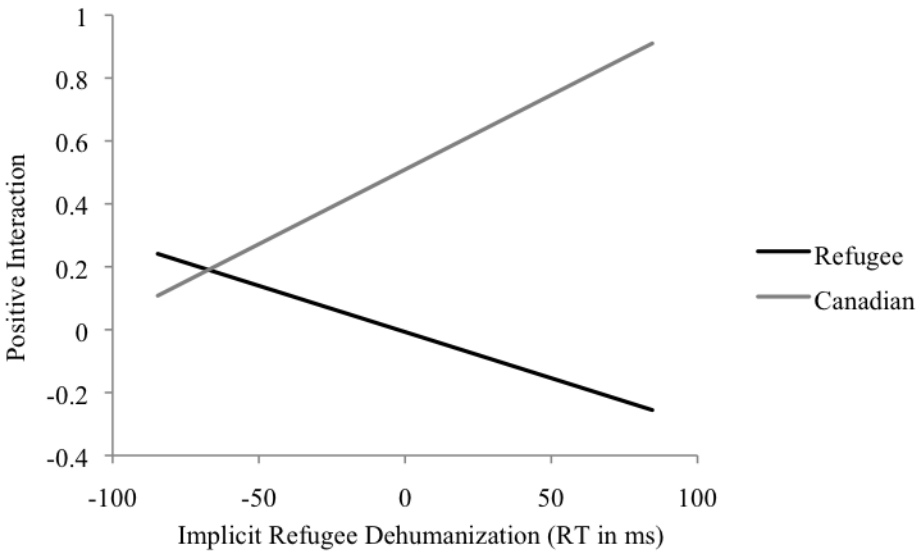


Figure 3. Interaction effect between type of interaction partner and implicit refugee dehumanization on positive interaction (based on video coding)

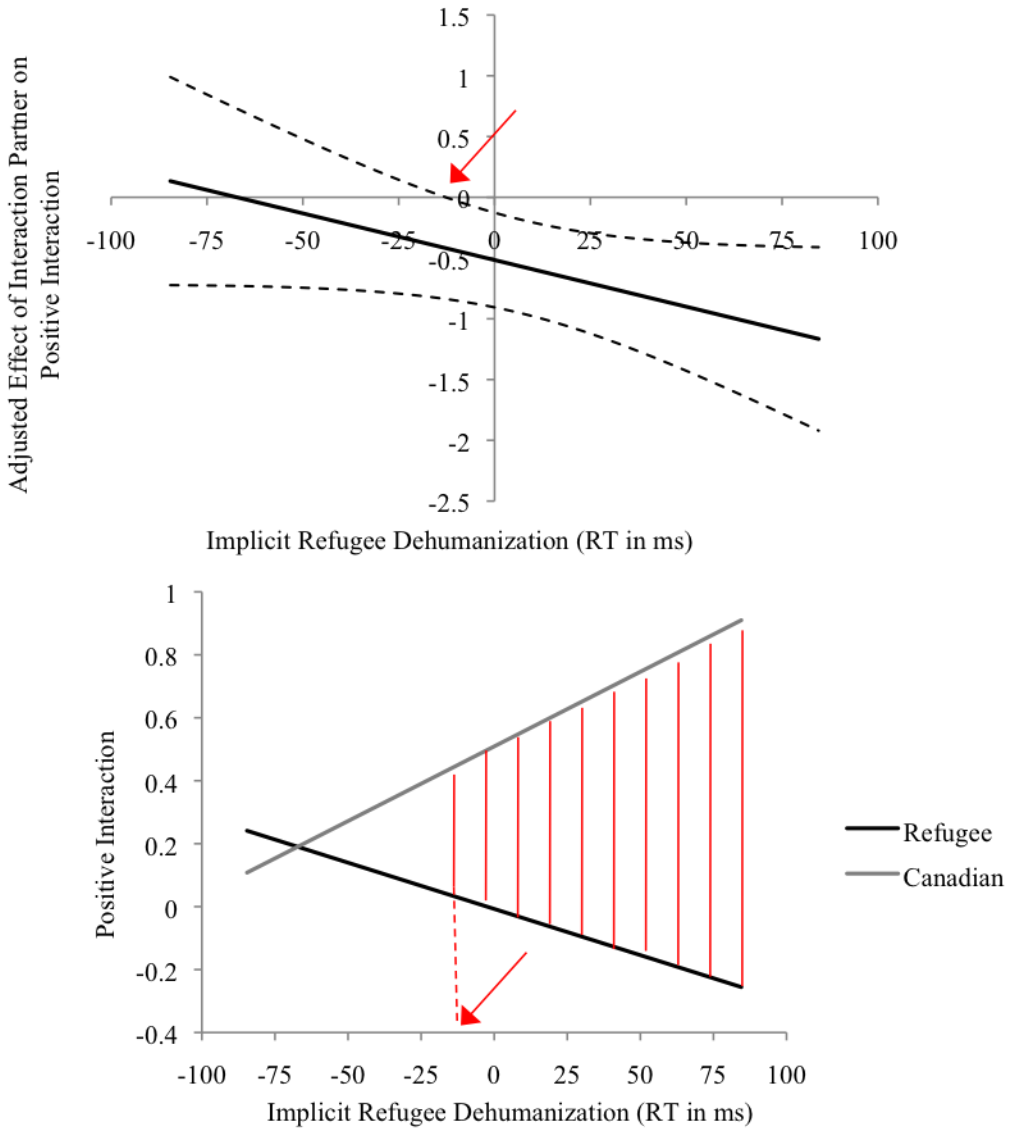


Figure 4. Top: Difference in positive interaction scores (based on video coding) between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score (dashed lines represent 95% confidence intervals); Bottom: Figure 3 with highlighted area indicating significant differences between the regression lines.

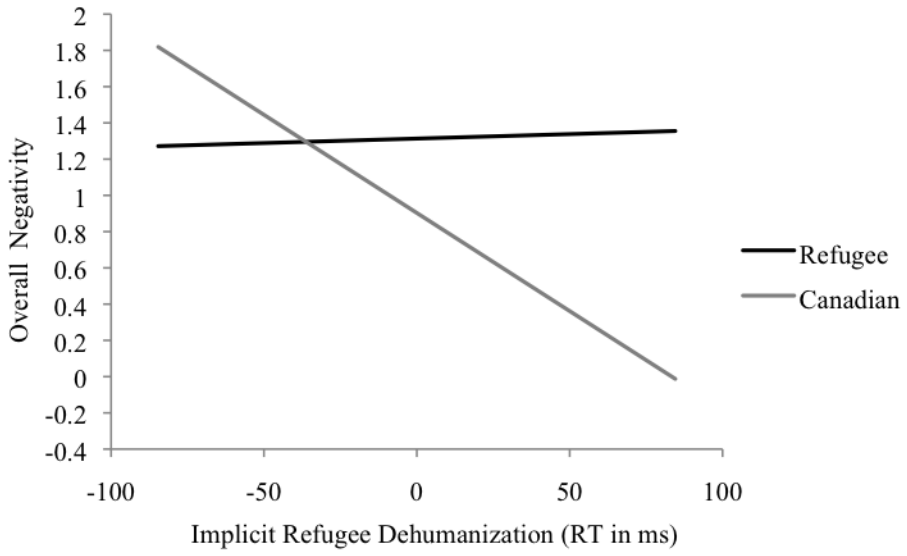


Figure 5. Interaction effect between type of interaction partner and implicit refugee dehumanization on overall negativity (based on video coding)

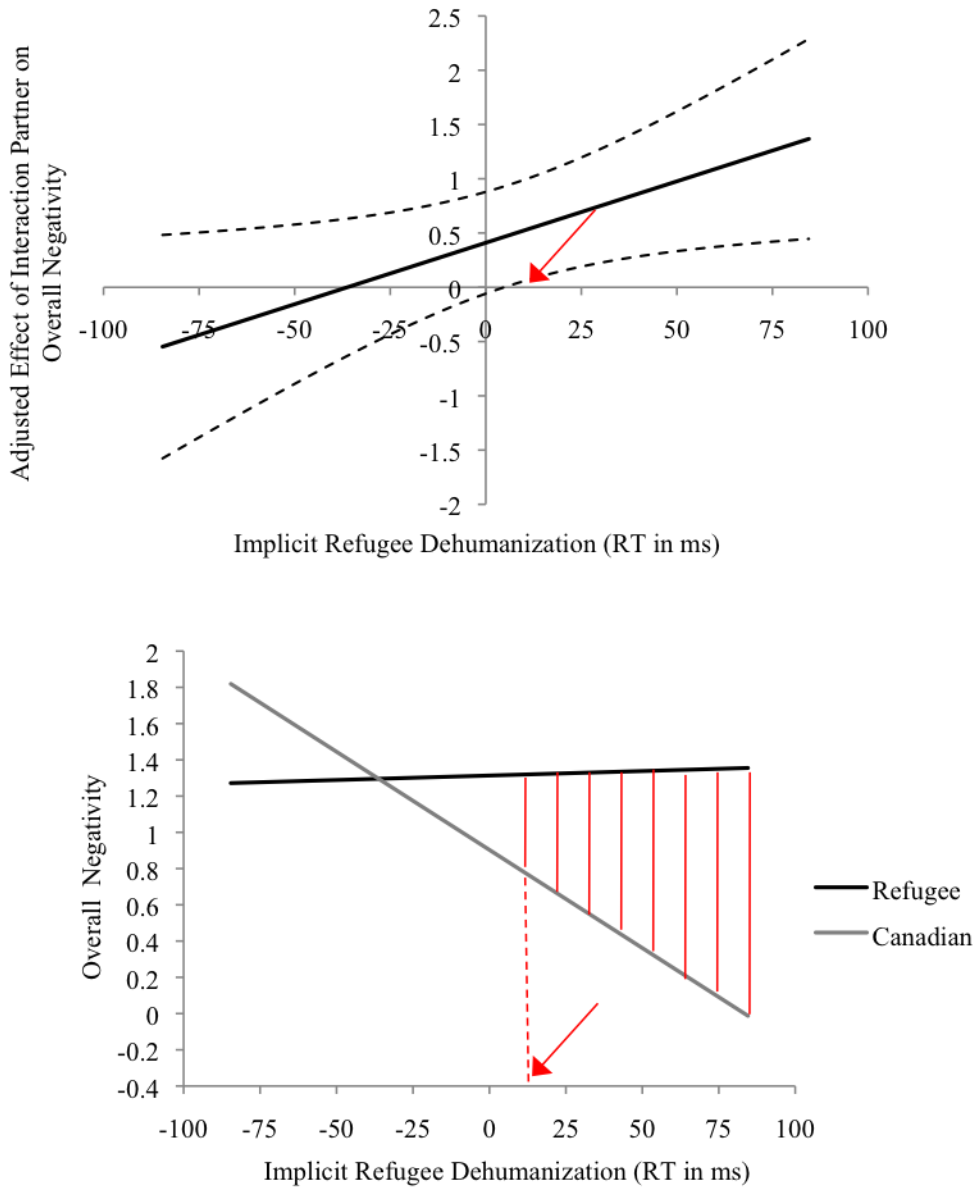


Figure 6. Top: Difference in overall negativity scores (based on video coding) between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score (dashed lines represent 95% confidence intervals); Bottom: Figure 5 with highlighted area indicating significant differences between the regression lines.

Finally, the LDS model for overall negativity showed a significant interaction between categorization task and implicit refugee dehumanization (b = .015, p = .02). Only after performing the evaluative categorization task (as opposed to the conceptual categorization task), participants with higher implicit refugee dehumanization scores

were more likely to engage in a less negative interaction (b = -.011, p = .001 and b = .004, p = .48, respectively). This interaction is better understood when looking at the simple slopes for the marginally significant three-way interaction between type of interaction partner, categorization task and implicit refugee dehumanization (b = -.015, p = .08). The only significant relationship between implicit refugee dehumanization and overall negativity of the interaction emerged when participants were asked to perform the evaluative categorization task and interacted with the Canadian student (b = -.011, p = .001; evaluative task and refugee: b = .000, p = .90; conceptual task and Canadian student: b = .351, p = .14; and conceptual task and refugee: b = .000, p = .96). That is, only after performing the evaluative categorization task (as opposed to the conceptual categorization task), participants with higher implicit refugee dehumanization scores were more likely to engage in a less negative interaction when talking to a Canadian student.

To test whether the effects of implicit refugee dehumanization on the latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity are unique to implicit refugee dehumanization, I ran several latent change score models with implicit Canadian dehumanization, implicit refugee evaluation, implicit Canadian evaluation, explicit refugee dehumanization and explicit refugee evaluation. In terms of implicit Canadian dehumanization, the four latent difference score models for positive interaction, positive behaviour, overall positivity and overall negativity had, however, a poor model fit and will therefore not be interpreted (X^2 (7) = 11.18 to 15.40, p = .03 to .13; RMSEAs = .087 to .123; CFIs = .705 to .895). For a description of these models please see Tables 3 and 4 in the Annex.

To test whether implicit refugee evaluation predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 5 and 6 in the Annex for detailed model results). All four models had an acceptable or good model fit (X^2 (3) = 2.51 to 5.18, p = .16 to .47; RMSEAs = .000 to .096; CFIs = .930 to 1.000). The results showed an effect of type of interaction partner on positive behaviour (b = -.261, p = .04) and positive interaction (b = -.369, p = .01). Moreover, implicit refugee evaluation

negatively predicted the overall positivity of the interaction (b = -.004, p = .05). The results also revealed a marginally significant interaction between type of interaction partner and implicit refugee evaluation on overall negativity of the interaction (b = -.007, p = .07). The simple slopes analysis, however, showed no significant relationships between implicit refugee evaluation and overall negativity of the interaction (refugee: b = -.004, p = .26 and Canadian: b = .004, p = .12; see also Figure 7). Also, the difference in overall negativity between the refugee and the Canadian condition seems only to emerge when implicit refugee evaluation scores are very low (see Figure 8). Finally, none of the other interaction effects between type of interaction partner and implicit refugee evaluation were significant (b = .002 to .005, p = .16 to .61).

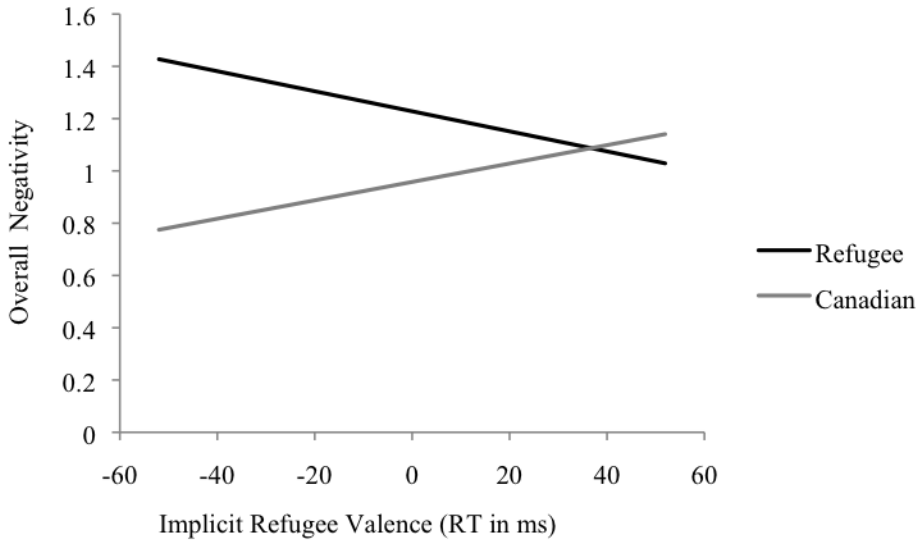


Figure 7. Interaction effect between type of interaction partner and implicit refugee evaluation on overall negativity (based on video coding)

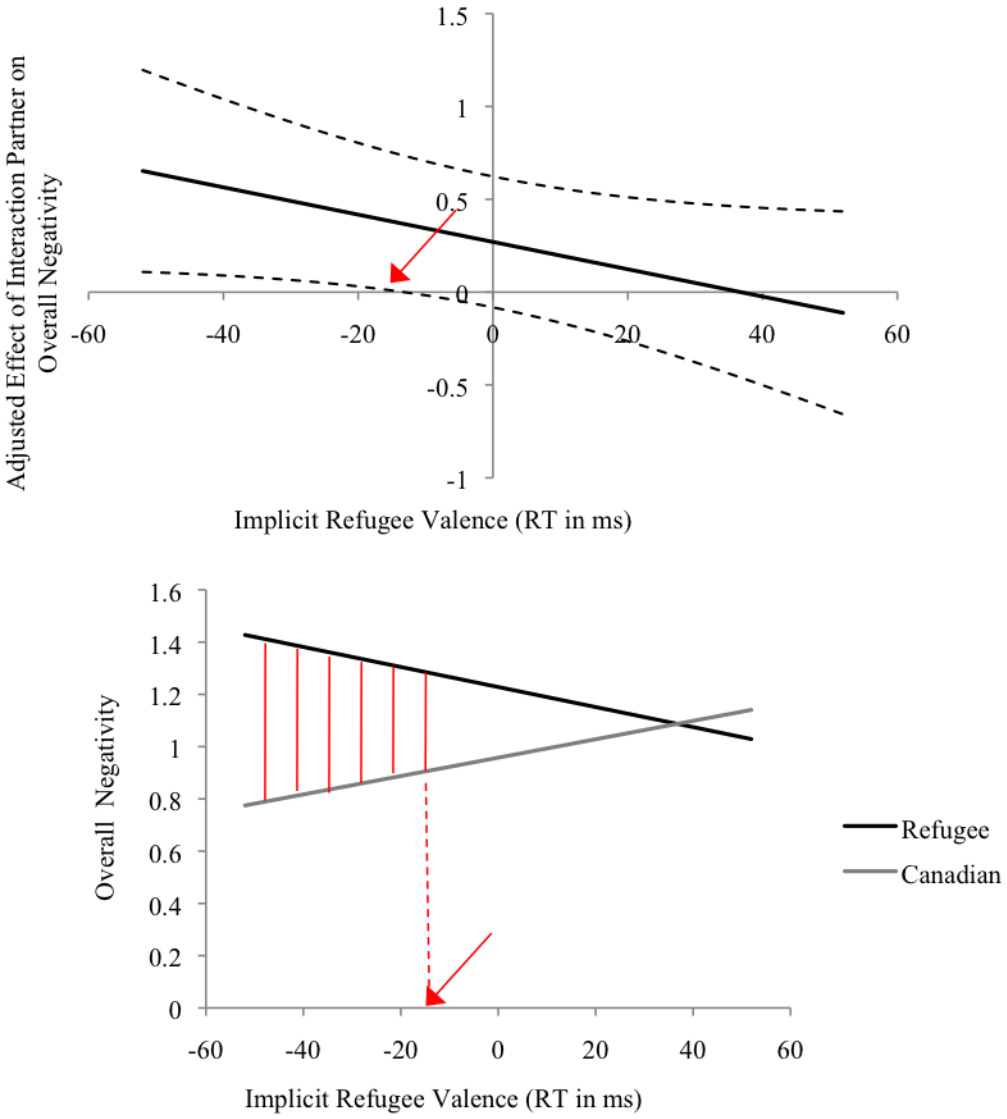


Figure 8. Top: Difference in overall negativity scores (based on video coding) between the refugee and Canadian condition adjusted for participants' implicit refugee evaluation score (dashed lines represent 95% confidence intervals); Bottom: Figure 7 with highlighted area indicating significant differences between the regression lines.

To examine whether implicit Canadian evaluation predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I tested four separate latent change score models (see Tables 7 and 8 in the Annex for detailed model results). The two models for positive behaviour and overall positivity had a poor model fit (X^2 (3) = 6.76 and 7.60, p = .08 and .06; RMSEAs = .126

and .139; CFIs = .907 and .785). The other two models for positive interaction and positive behaviour had a good model fit (X^2 (3) = 1.94 and 3.29, p = .59 and .35; RMSEAs = .000 and .035; CFIs = 1.000 and .990). Consistent with the results of the previous models, participants were less likely to display positive behaviour (b = -.249, p = .05) and engage in a positive interaction (b = -.363, p = .01) when talking to the refugee than to the Canadian student. Finally, none of the interaction effects were significant (b = -.003 to .004, p = .32 to .98). Implicit Canadian evaluation did not predict participants' degree of positive behaviour and the positivity of the interaction with the refugee or Canadian student.

Explicit Measures. To test whether explicit refugee dehumanization predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 9 and 10 in the Annex for detailed model results). All four models had a good model fit (X^2 (3) = .29 to 1.79, p = .62 to .96; RMSEAs = .000; CFIs = 1.000). Consistent with the results of the previous models, participants were less likely to display positive behaviour (b = -.264, p = .04) and engage in a positive interaction (b = -.372, p = .01) when talking to the refugee than to the Canadian student. Explicit refugee dehumanization did not predict any of the dependent variables in the refugee or Canadian student condition (b = -.102 to .019, p = .44 to .99).

Finally, to examine whether participants' explicit evaluation of refugees predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 11 and 12 in the Annex for detailed model results). All four models had a good model fit (X^2 (3) = 2.32 to 3.54, p = .32 to .51; RMSEAs = .000 to .048; CFIs = .971 to 1.000). In line with the results of the previous models, participants were less likely to display positive behaviour (b = -.258, p = .05) and engage in a positive interaction (b = -.373, p = .01) when talking to the refugee than to the Canadian student. Participants' explicit evaluation of refugees did not predict any of the dependent variables in the refugee or Canadian student condition (b = -.011 to .008, p = .13 to .80).

2.2.8 Verbal Behaviour

Implicit Measures. To test whether implicit refugee dehumanization predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity in verbal behaviour, I ran four separate latent change score models (see Tables 13 and 14 in the Annex for detailed model results). All four models had a very good model fit (X^2 (7) = 3.04 to 6.26, p = .51 to .88; RMSEAs = .000; CFIs = 1.000). While implicit refugee dehumanization positively predicted positive behaviour (b = .005, p = .01), positive interaction (b = .007, p = .00) and overall positivity (b = .005, p = .02), the interaction between implicit refugee dehumanization and type of interaction partner was not significant for any of the dependent variables (b = -.006 to -.001, p = .13 to .71).[6] None of the three-way interactions between type of interaction partner, implicit refugee dehumanization and categorization task were significant (b = -.005 to .006, p = .32 to .99).

To test whether implicit Canadian dehumanization predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 15 and 16 in the Annex for detailed model results). All four models had a very good model fit (X^2 (7) = 1.86 to 5.83, p = .56 to .97; RMSEAs = .000; CFIs = 1.000). The results showed that type of interaction partner had a significant effect on overall positivity of the interaction (b = .342, p = .05). That is, the interaction with the refugee was overall more positive than the interaction with the Canadian student. Implicit Canadian dehumanization significantly or marginally significantly predicted positive behaviour (b = .003, p = .05), overall positivity (b = .004, p = .06) and overall negativity (b = -.006, p = .01). However, the interaction between implicit Canadian dehumanization and type of interaction partner was not significant for any of the dependent variables (b = -.004 to .003, p = .19 to .44).[7] None of the three-way interactions between type of interaction partner, implicit Canadian dehumanization and categorization task was significant (b = -.003 to .004, p = .47 to 67).

To test whether implicit refugee evaluation predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 17 and 18 in the

Annex for detailed model results). All four models had a very good model fit (X^2 (3) = .79 to 2.70, p = .44 to .85; RMSEAs = .000; CFIs = 1.000). Across all four dependent variables, the results showed no difference in the positivity of participants' verbal behaviour toward the refugee when compared to the positivity of participants' verbal behaviour toward the Canadian student (b = -.017 to .162, p = .20 to .90). Moreover, implicit refugee evaluation did not predict participants' verbal behaviour toward the refugee or Canadian student across all four dependent variables (b = -.002 to .003, p = .29 to .88).

To test whether implicit Canadian evaluation predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 19 and 20 in the Annex for detailed model results). All four models had a very good model fit (X^2 (3) = .44 to 2.27, p = .52 to .93; RMSEAs = .000; CFIs = 1.000). Across all four dependent variables, the results showed no difference in participants' verbal behaviour toward the refugee when compared to participants' verbal behaviour toward the Canadian student (b = -.007 to .173, p = .17 to 1.00). Moreover, implicit Canadian evaluation did not predict participants' verbal behaviour toward the refugee or Canadian student across all four dependent variables (b = -.001 to .002, p = .51 to .95).

Explicit Measures. To examine whether explicit refugee dehumanization predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity in verbal behaviour, I ran four separate latent change score models (see Tables 21 and 22 in the Annex for detailed model results). All four models had a very good model fit (X^2 (3) = 1.52 to 2.86, p = .41 to .68; RMSEAs = .000; CFIs = 1.000). Consistent with the results of the previous models, the results showed no difference in participants' verbal behaviour toward the refugee when compared to participants' verbal behaviour toward the Canadian student (b = -.001 to .172, p = .17 to 1.00). However, the results revealed a marginally significant interaction between type of interaction partner and explicit refugee dehumanization on positive interaction (b = -.212, p = .08). While the interaction points toward the expected direction (see Figure 9), the simple slopes (refugee: b = -.155, p = .12 and Canadian: b = .057, p = .40) as well as the

difference between the regression lines were not significant (see Figure 10). For all other dependent variables this interaction was not significant (b = -.095 to .039, p = .28 to .73).

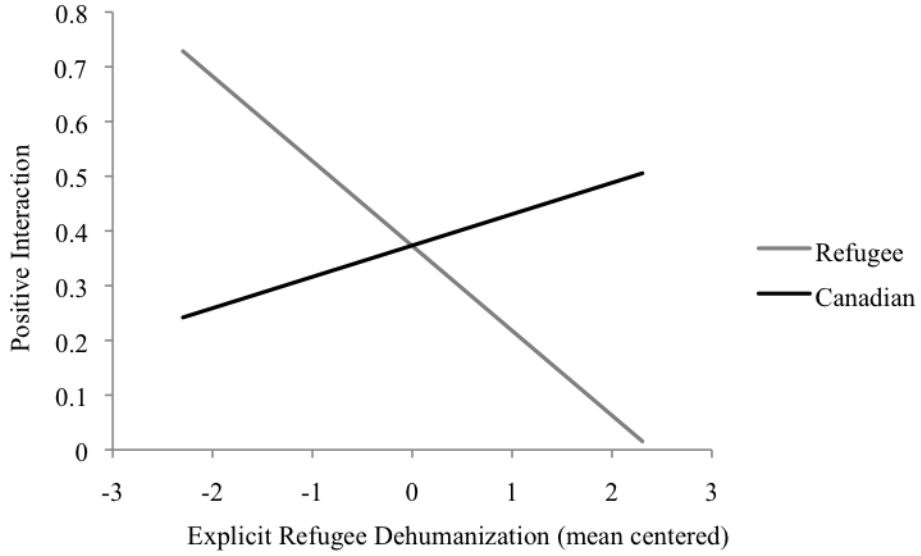


Figure 9. Interaction effect between type of interaction partner and explicit refugee dehumanization on positive interaction (based on audio coding)

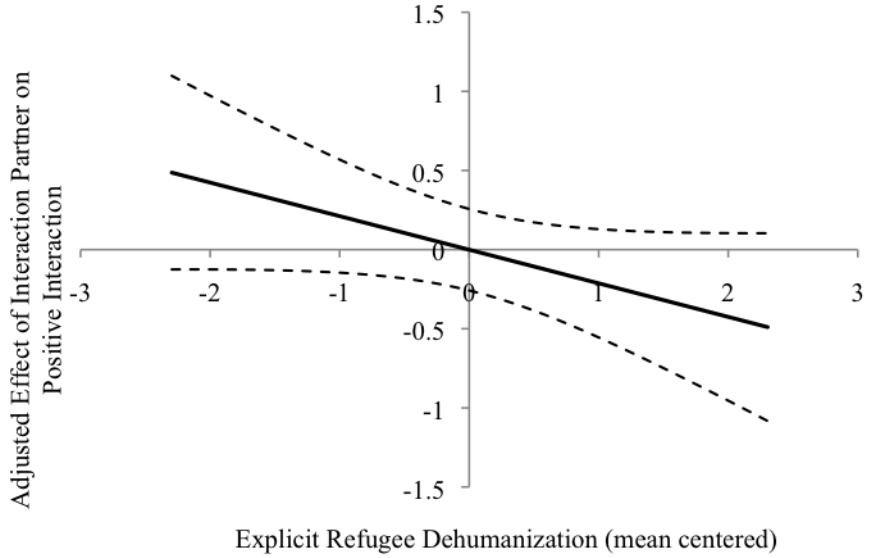


Figure 10. Difference in positive interaction scores (based on audio coding) between the refugee and Canadian condition adjusted for participants' explicit refugee dehumanization score (dashed lines represent 95% confidence intervals)

Finally, to test whether participants' explicit evaluation of refugees predicts participants' latent change scores for positive interaction, positive behaviour, overall positivity and overall negativity, I ran four separate latent change score models (see Tables 23 and 24 in the Annex for detailed model results). With exception of the model for overall positivity, all other models had a poor model fit (model for overall positivity: X^2 (3) = 1.76, p = .62; RMSEA = .000; CFI = 1.000; and all other models: X^2 (3) = 4.44 to 5.18, p = .16 to .22; RMSEAs = .079 to .091; CFIs = .602 to .898). The results showed no difference in overall positivity of the interaction in the refugee condition compared to the Canadian student condition (b = .167, p = .18). Moreover, participants' explicit evaluation of refugees did not predict the overall positivity of the interaction in the refugee or Canadian student condition (b = .005, p = .43).

2.3 Discussion

The current set of analyses found that participants who performed the conceptual categorization task were more likely to implicitly associate refugees with the animal concept than the human concept when compared to Canadians. This partially supports previous research on implicit dehumanization of refugees using the same measure (Medianu, 2010; Medianu et al., 2016). While the direction of the effect was in the expected direction, the finding that implicit dehumanization is conditional on the type of categorization task is new. The conditional effect is most likely due to the unexpected finding that not only refugees, but also Canadians were more likely to be associated with the animal concept than the human concept when participants were asked to perform the evaluative categorization task. The reason for this effect is unclear especially because past research has shown that Canadians are less likely to be associated with the animal concept than the human concept regardless of categorization task (Medianu, 2010). However, more relevant to the present study is that across both types of categorization tasks, participants tended to associate refugees more with the animal concept than the human concept. Furthermore, on an explicit level, on average participants perceived refugees as engaging in enemy and barbaric acts, which is consistent with previous research (Esses et al., 2008; Medianu et al., 2016).

Furthermore, it was expected that implicit refugee dehumanization would predict nonverbal behaviour, but not verbal behaviour directed toward a refugee. It was also expected that explicit refugee dehumanization would predict verbal behaviour, but not nonverbal behaviour directed toward a refugee. The present research found partial support for these hypotheses. Importantly, as expected, participants with higher implicit dehumanization scores showed less positive nonverbal behaviour toward a refugee than a Canadian student. Furthermore, participants with higher implicit dehumanization scores did not differ in their verbal behaviour toward a refugee compared to the Canadian student. That is, participants' tendency to implicitly associate refugees with the animal concept as opposed to the human concept found its expression only in their nonverbal behaviour but not in their verbal behaviour. This suggests that implicit refugee dehumanization is more likely to be reflected in behaviours that are not easily controlled.

As expected, explicit refugee dehumanization did not predict nonverbal behaviour toward a refugee. Furthermore, I found mixed evidence regarding the effect of explicit refugee dehumanization on verbal behaviour toward a refugee. On the one hand, there is evidence that explicit refugee dehumanization might be associated with less positive verbal behaviour. In particular, the quality of the interaction based on participants' verbal behaviour tended to be rated lower for the refugee interaction than the Canadian interaction for participants who explicitly dehumanized refugees. On the other hand, explicit refugee dehumanization did not predict participants' verbal behaviour during the interaction.

The present analyses also looked at participants' explicit and implicit evaluation of refugees and Canadians. On an explicit level, participants reported on average neither very favourable nor very favourable attitudes toward refugees. On an implicit level, participants tended to associate more negative than positive evaluation to refugees when compared to Canadians. However, the present study showed that overall participants' implicit and explicit evaluation of refugees did not predict participants' nonverbal and verbal behaviour toward either the refugee or Canadian student. This supports the idea that the dehumanization construct cannot just be reduced to evaluations or attitudes (Esses et al., 2008).

Chapter 3

3 Research Question 2

The first analyses of my dissertation were based on the coding of participants' nonverbal (and verbal) behaviour using adjective ratings. That is, so far I analysed data derived from the coders 'gut' impressions of the interaction between the participants and the confederate. My next question aimed to further explore the data and to examine whether specific behaviours would be found to differ as a function of implicit refugee dehumanization and type of interaction partner. That is, I sought to determine whether implicit and explicit refugee dehumanization predict specific nonverbal behaviours that are indicative of anxiety or general uneasiness, such as self-touch and fidgeting (Ekman & Friesen, 1972; Trawalter, 2006), and specific nonverbal behaviours that are indicative of happiness and/or comfort (e.g., smiles, gestures; Ekman & Friesen, 1972; Ekman et al., 1972; Izard, 1971).

According to past research, nonverbal behaviour cues or codes are likely to convey emotions and attitudes (DePaulo, 1992; DePaulo & Friedman, 1998; Ekman & Friesen, 1967). For example, higher levels of eye contact reflect greater attraction, intimacy, and respect (Dovidio et al., 1997, Kleinke, 1986). Similarly, research has shown that participants with the goal to ingratiate themselves are more likely to lean forward, create eye contact, nod and smile (Godfrey, Jones, & Lord, 1986). In terms of psychological discomfort and anxiety, research has shown that, for example, posture relaxation, eye contact, and to a certain extent shifts in posture during a social interaction are correlated with anxiety measured physiologically (finger sweat index) and measured objectively by trained coders. Furthermore, self-touch (the use of adapters) has been linked to a heightened sense of psychological discomfort and anxiety (Ekman & Friesen, 1972). Based on this research it was expected that participants with high implicit dehumanization scores would be more likely to exhibit nonverbal behaviours that are indicative of psychological discomfort and anxiety and less likely to exhibit nonverbal behaviours indicative of pleasure or happiness when interacting with a refugee, but not

when interacting with a Canadian. It was also hypothesized that explicit dehumanization of refugees would not predict any of the specific nonverbal behaviours.

3.1 Method

The coding of specific nonverbal behaviours was based on the same thin slices that were extracted to answer Research Question 1. Three new coders rated the extent to which participants displayed specific nonverbal behaviours. In particular, for each of the five time points the three coders rated the extent to which participants fidgeted, used adapters (e.g., fixed hair, played with watch or necklace, adjusted clothing, etc.), moved their hands (gestured), nodded their head, smiled, frowned, leaned forward in the direction of the confederate (as opposed to leaned backward away from the confederate), closed their arms and body posture, made eye contact, and controlled their facial activity (facial rigidity; Trawalter, 2006)[8]. The coders provided their ratings on a scale from 1 to 7 where 1 referred to 'not at all' and 7 to 'very much' (see Appendix F for coding instructions). Furthermore, following Trawalter's (2006) coding instructions, the three coders were first asked to independently review all thin slices to get a sense of the range of participants' specific behaviours. They were also asked to identify example behaviours for both ends of the rating scale as well as for the mid-point of the rating scale. Then, the three coders were asked to share their examples and agree on the best examples before starting their independent coding.

Intraclass correlation coefficients showed adequate to strong levels of agreement among coders for the specific behaviours at each time point (ICCs = .55 to .93, see Table 4). Therefore, the three coders' scores were averaged for these dependent variables at each time point. Finally, for the analyses aimed at examining participants' behaviour averaged across the entire interaction, I calculated an average for each specific behaviour based on participants' scores for T3, T4 and T5. The average scores (T345) for fidgeting, smiling, frowning, leaning forward, closed body posture and adapters had acceptable, good and very good reliabilities (Cronbach αs = .68 to .91). However, the average scores (T345) for gesturing, nodding and eye contact had low and very low reliabilities (Cronbach αs = .52, .47, and .28). The lower reliability scores for gesturing and nodding

may be explained by the fact that these two behaviours are very much influenced by whether the participant is the speaker or listener during the T3, T4 and T5 thin slices. That is, participants are more likely to nod when they are listening and more likely to use gestures when they are speaking. The thin slices were selected based on specific time points during the interaction and not based on whether participants were speaking or listening. The low reliability score for eye contact may be related to the fact that often participants looked to interaction questions posted on the wall on the side of the interaction room. Overall, these factors are likely sources of bias and may have contributed to the low reliability of the average scores for these specific behaviours. These behaviours were, therefore, not further analysed.

Table 4
Intraclass Correlation Coefficients for the Specific Behaviours for Each Time Point

	T1	T2	T3	T4	T5
Fidgeting	.70	.68	.73	.78	.74
Gestures	.93	.89	.91	.93	.91
Nodding	.84	.82	.79	.90	.85
Eye Contact	.81	.79	.86	.93	.85
Smile	.90	.88	.87	.88	.86
Frown	.64	.72	.67	.68	.72
Lean Forward	.67	.72	.75	.79	.74
Closed Body Posture	.62	.55	.64	.57	.67
Adapters	.73	.73	.67	.59	.68

In contrast to previous research, which was able to find underlying factors for a range of specific behaviours, such as ‘positivity’ and ‘engagement’ (Trawalter, 2006), the present data did not produce a clear factor structure for the specific behaviours at any of the five time points. Therefore, all specific behaviours were analysed separately.

3.2 Results

3.2.1 Analytic Method

As in my previous analyses, I used latent difference score models for each specific behaviour. A detailed description of all the models can be found in the Annex. The analyses were conducted with Mplus 7.0 (Muthén & Muthén, 2012) using maximum likelihood estimation.

3.2.2 Descriptive Results for Specific Nonverbal Behaviours

The results showed that on average participants did not fidget or frown[9] a lot during the baseline interaction (*M* = 2.87, *SD* = 1.45; and *M* = 5.18, *SD* = 1.14 to 1.32) and the main interaction (*M* = 3.13, *SD* = 1.32; and *M* = 4.97, *SD* = .95; see also Appendix I for detailed means, standard deviations and correlations between these variables). Participants' averages for smiling, facial rigidity[10], leaning forward and closed body posture lied around the middle of the scale for both the baseline interaction (*M* = 3.75 to 4.22, *SD* = 1.06 to 1.71) and the main interaction (*M* = 3.71 to 4.44, *SD* = .97 to 1.19). Finally, participants did not use many adapters during the baseline interaction (*M* = 2.89, *SD* = 1.65). The average adapter use was slightly higher during the main interaction (*M* = 3.42, *SD* = 1.32).

Furthermore, across the tested latent change score models (see also Tables 25-48 in the Annex), the latent change scores showed that the extent to which participants frowned (intercept = -.091 to -.192 to, *p* = .22 to .53), leaned forward (intercept = .091 to .257, *p* = .05 to .39[11]), smiled (intercept = -.006 to -.147, *p* = .48 to .98) and fidgeted (intercept = .182 to .367, *p* = .10 to .28) did not differ between the baseline interaction and the main interaction. However, participants had less rigid faces (intercept = .436 to .519, *p* = .00 to .02) and used more adapters (intercept = .689 to .811, *p* = .00) during the main interaction than the baseline interaction. Finally, participants' body posture was less closed in the main interaction than in the baseline interaction (intercept = -.289 to -.333, *p* = .00 to .02).

As with the previous analyses, in the following paragraphs I will not be interested in the absolute differences between the baseline and main interaction. Instead the focus will be on examining whether the size of these differences varies depending on participants' implicit and explicit refugee dehumanization scores and the experimental condition. In the following section I will therefore concentrate on the relative differences and not the absolute differences. For ease of expression, I will always talk about the extent to which participants displayed a specific nonverbal behaviour meaning that while participants may have, for example, always displayed a certain behaviour more often when interacting with the Asian confederate than when interacting with the White

confederate, this difference may have been smaller (or larger) depending on participants' implicit refugee dehumanization score and on whether they believed that the Asian confederate is a refugee or a Canadian student.

3.2.3 Predicting Specific Nonverbal Behaviours

To test whether implicit and explicit dehumanization as well as implicit and explicit evaluation predicted participants' latent change scores for closed body posture, fidgeting, smiling, frowning, adapter use, facial rigidity and leaning forward I ran 42 separate latent change score models (see Tables 25 to 48 in the Annex for detailed model results). With the exception of the model for facial rigidity with explicit dehumanization and implicit Canadian evaluation as main predictors, the model for adapters with implicit Canadian evaluation as the main predictor, and the model for smiling with implicit Canadian evaluation as the main predictor (X^2 (3) = 5.521 to 7.688, p = .05 to .14; RMSEA = .103 to .141; CFI = .859 to .881), all models had a good model fit (X^2 (3 or 7) = .210 to 9.641, p = .18 to .98; RMSEAs = .000 to .090; CFIs = .923 to 1.000).

For **closed body posture**, the results revealed a main effect of type of interaction partner on closed body posture (b = .318 to .405, p = .02 to .06). Participants in the refugee condition were more likely to have a closed body posture than participants in the Canadian student condition. Furthermore, the results showed a significant interaction effect between type of interaction partner and implicit refugee evaluation on closed body posture (b = -.007, p = .02). The simple slope analysis showed that there was a negative relationship between implicit refugee evaluation and closed body posture in the refugee condition (b = -.006, p = .02), but not in the Canadian student condition (Canadian: b = .001, p = .58). Moreover, there was a difference in closed body posture between experimental conditions for participants with 'lower' implicit refugee evaluation scores (see Figure 11). Among these participants, participants' body posture was more likely to be closed when interacting with the refugee than when interacting with the Canadian student.

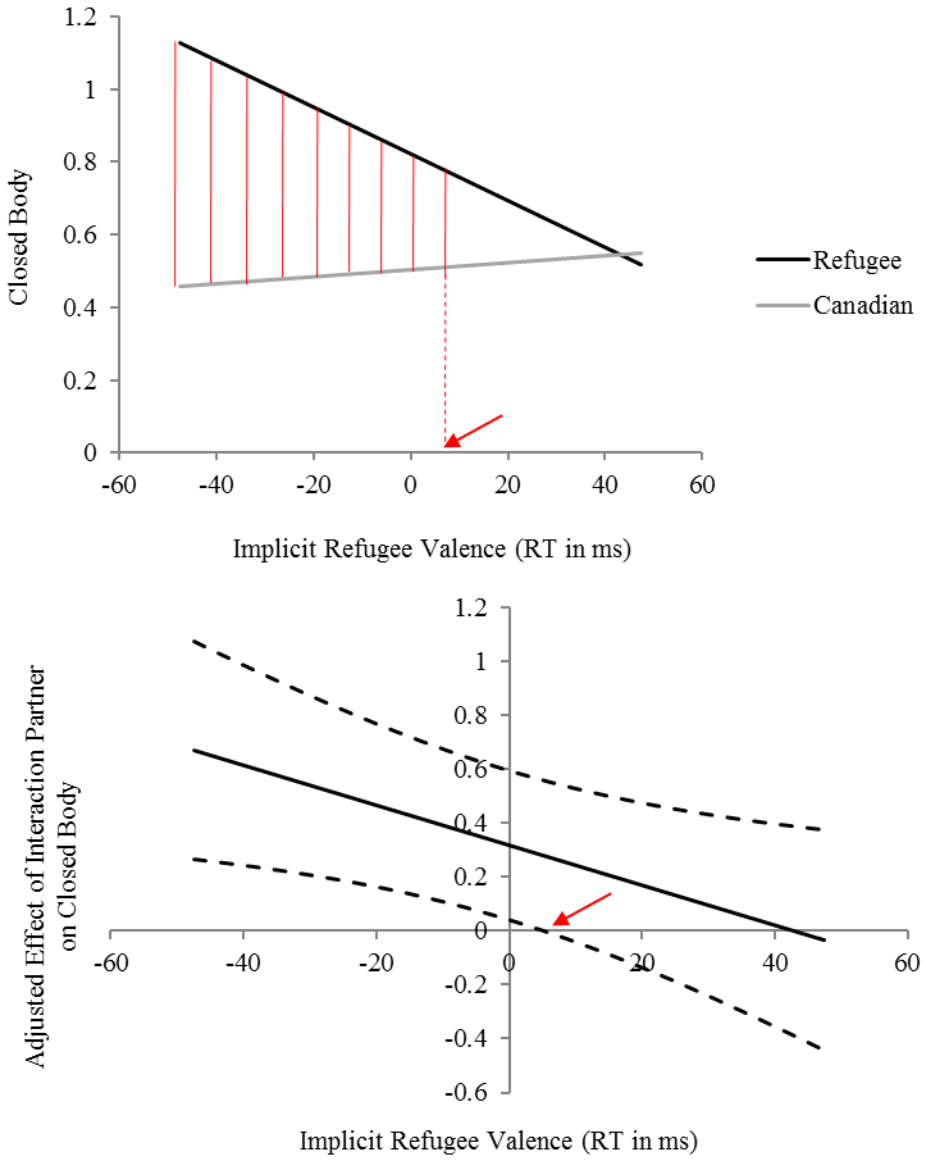


Figure 11. Top: Interaction between type of interaction partner and implicit refugee evaluation on closed body posture with highlighted area indicating significant differences between the regression lines. Bottom: Difference in closed body posture between the refugee and Canadian condition adjusted for participants' implicit refugee evaluation scores (dashed lines represent 95% confidence intervals).

For **fidgeting**, the latent difference score models only revealed a main effect of implicit refugee evaluation (b = -.006, p = .04).

For **smiling**, the results showed a main effect of implicit refugee dehumanization (b = .008, p = .04), a significant interaction between type of interaction partner and implicit refugee dehumanization (b = -.014, p = .02), and a significant 3-way interaction effect between type of interaction partner, implicit refugee dehumanization and type of categorization task (b = .023, p = .02). The simple slope analysis revealed that there was a significant positive relationship between implicit refugee dehumanization and smiling for participants who interacted with the Canadian student and performed the evaluative task (b = .008, p = .04), but not for the students who interacted with the Canadian student and performed the conceptual task (b = -.004, p = .57, see Figures 12 and 13). There was no significant relationship between implicit refugee dehumanization and smiling for participants who interacted with the refugee student for either type of categorization task (evaluative: b = -.006, p = .17, conceptual: b = .005, p = .28, see figure 23). Finally, participants with high implicit refugee dehumanization scores who performed the evaluative task were less likely to smile in the refugee condition than in the Canadian student condition (see Figures 12 and 13).

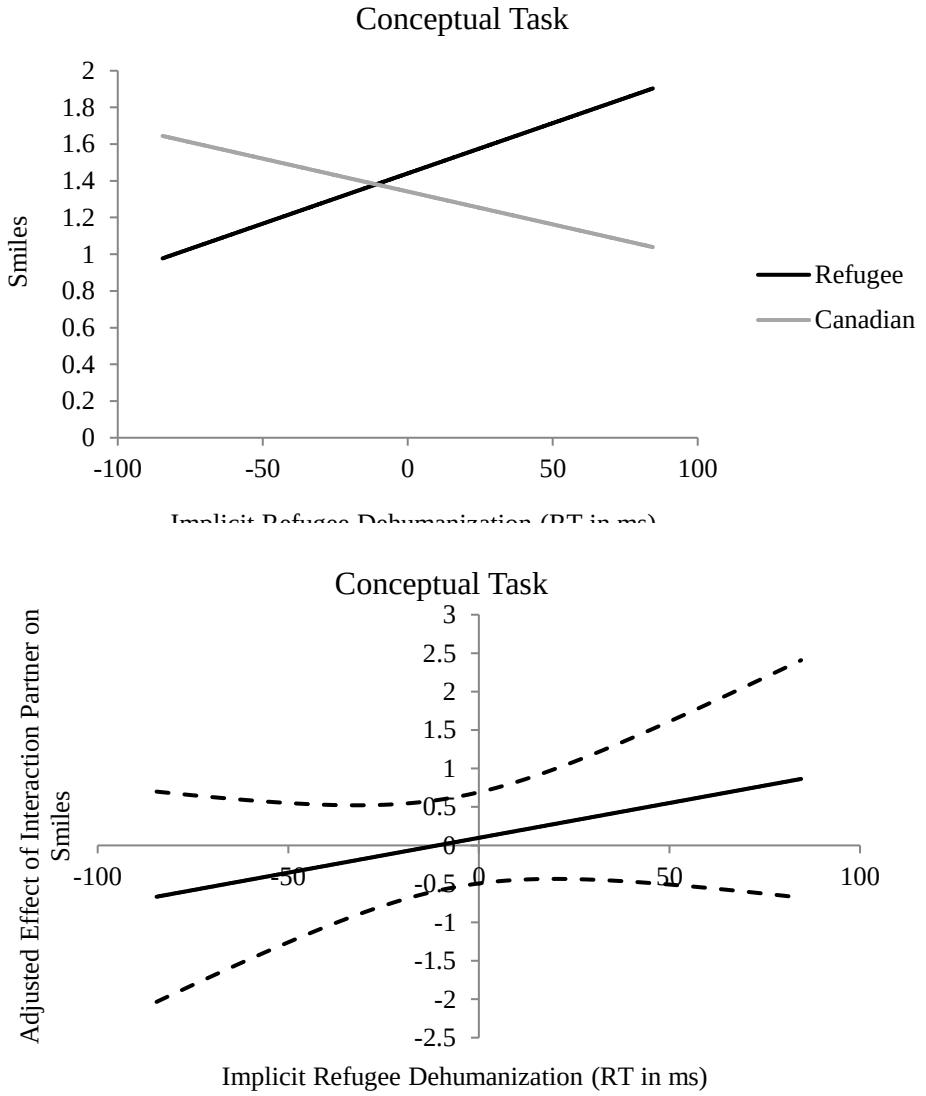


Figure 12. Top: Simple slopes for 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on smiling (illustrated are simple slopes for the conceptual categorization task). Bottom: Difference in smiling between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

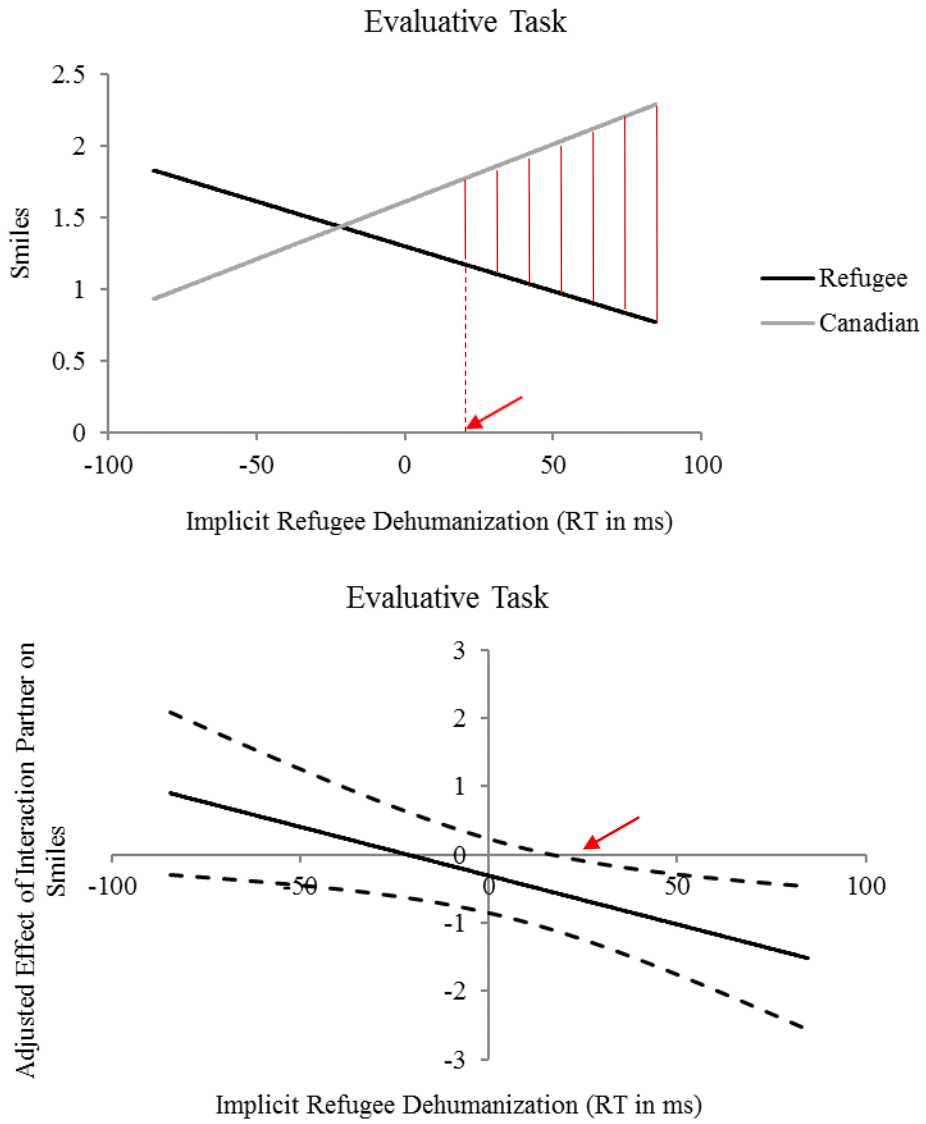


Figure 13. Top: Simple slopes for 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on smiling (illustrated are simple slopes for the evaluative categorization task). The highlighted area indicates significant differences between the regression lines. Bottom: Difference in smiling between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

The latent difference score model for smiling with implicit Canadian dehumanization produced similar results. In particular, the results revealed a significant main effect of implicit Canadian dehumanization (b = .008, p = .03), a marginally significant interaction between type of interaction partner and implicit Canadian dehumanization (b = -.010, p = .07), a significant interaction between type of categorization task and implicit Canadian dehumanization (b = .006, p = .02), and a significant 3-way interaction between type of interaction partner, implicit Canadian dehumanization and categorization task (b = .023, p = .01). The simple slope analysis revealed that there was a significant positive relationship between implicit Canadian dehumanization and smiling for participants who interacted with the Canadian student and performed the evaluative task (b = .008, p = .03), but not for the students who interacted with the Canadian student and performed the conceptual task (b = -.006, p = .20, see Figures 14 and 15). There was also a marginally significant relationship between implicit Canadian dehumanization and smiling for participants who interacted with the refugee and performed the conceptual categorization task (b = .006, p = .10), but not for the participants who interacted with the refugee and performed the evaluative categorization task (b = -.002, p = .67). Finally, participants with high implicit Canadian dehumanization scores who performed the evaluative task were less likely to smile in the refugee condition than in the Canadian student condition.

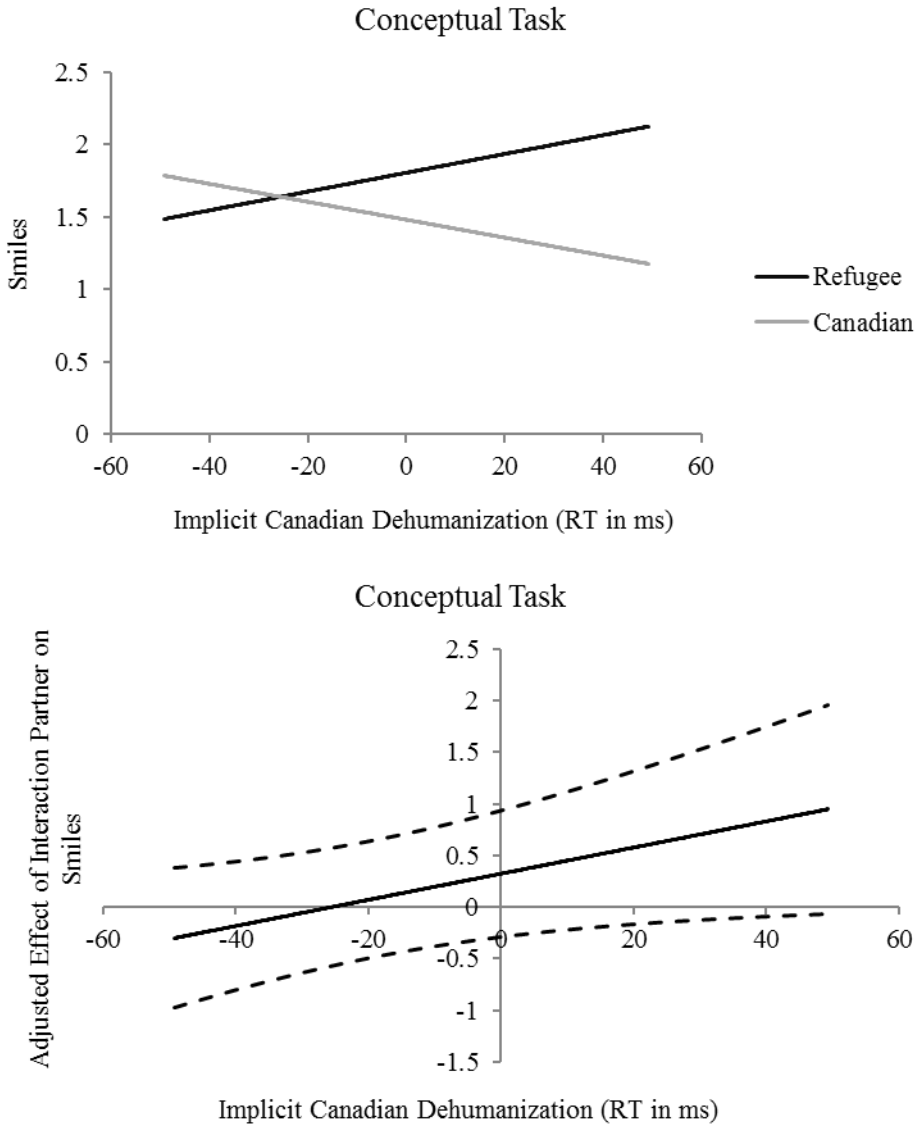


Figure 14. Top: Simple slopes for 3-way interaction between type of interaction partner, implicit Canadian dehumanization and type of categorization task on smiling (illustrated are simple slopes for the conceptual categorization task). Bottom: Difference smiling between the refugee and Canadian condition adjusted for participants' implicit Canadian dehumanization scores (dashed lines represent 95% confidence intervals).

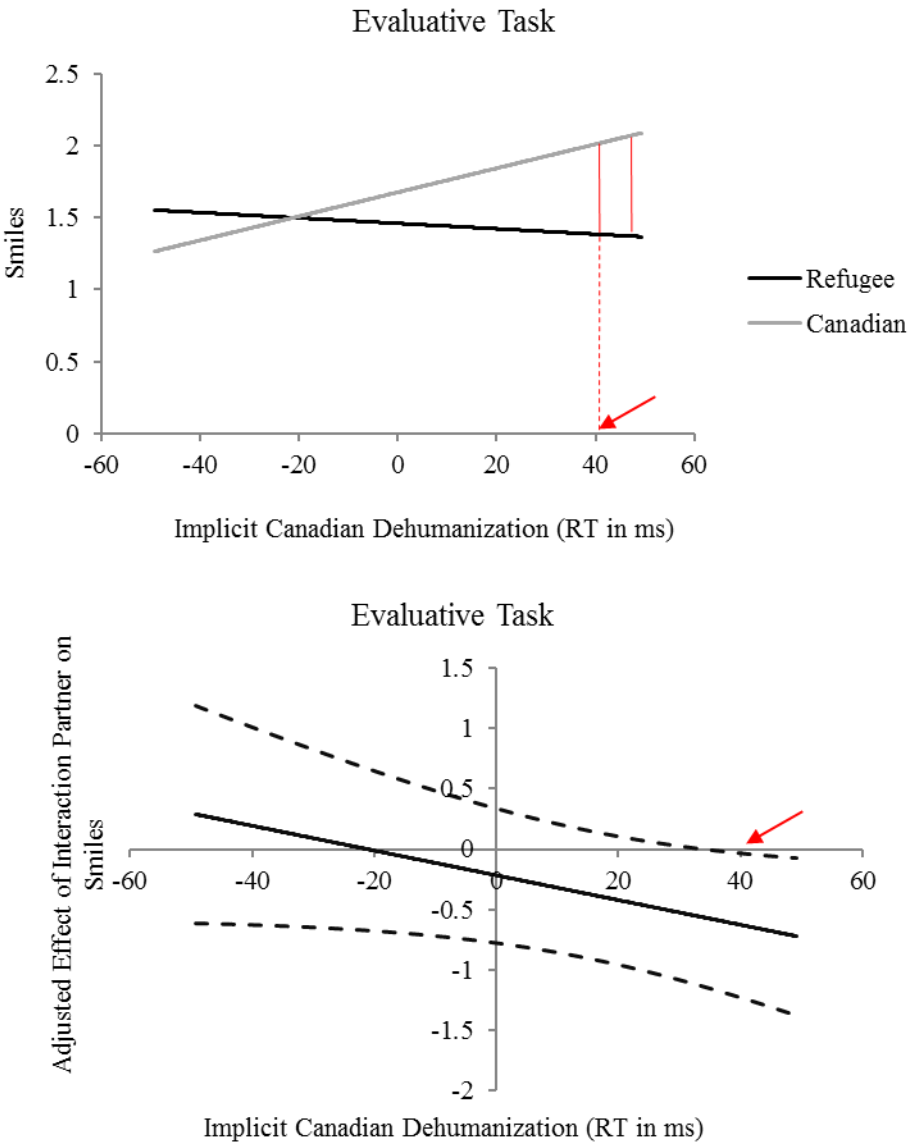


Figure 15. Top: Simple slopes for 3-way interaction between type of interaction partner, implicit Canadian dehumanization and type of categorization task on smiling (illustrated are simple slopes for the evaluative categorization task). The highlighted area indicates significant differences between the regression lines. Bottom: Difference in smiling between the refugee and Canadian condition adjusted for participants' implicit Canadian dehumanization scores (dashed lines represent 95% confidence intervals).

Given that both implicit refugee and implicit Canadian dehumanization produced the same results for smiling, I ran an additional LDS model, which included

simultaneously both predictors and the respective interaction terms. The results only revealed a significant 2-way interaction between type of interaction partner and implicit refugee dehumanization (b = -.018, p = .03). The simple slopes analysis showed that there was a marginally significant relationship between implicit refugee dehumanization and smiling in the refugee condition (b = -.012, p = .09), but not in the Canadian student condition (b = .005, p = .21). Moreover, participants with high implicit refugee dehumanization scores were less likely to smile in the refugee condition than in the Canadian student condition (see Figure 16).[12]

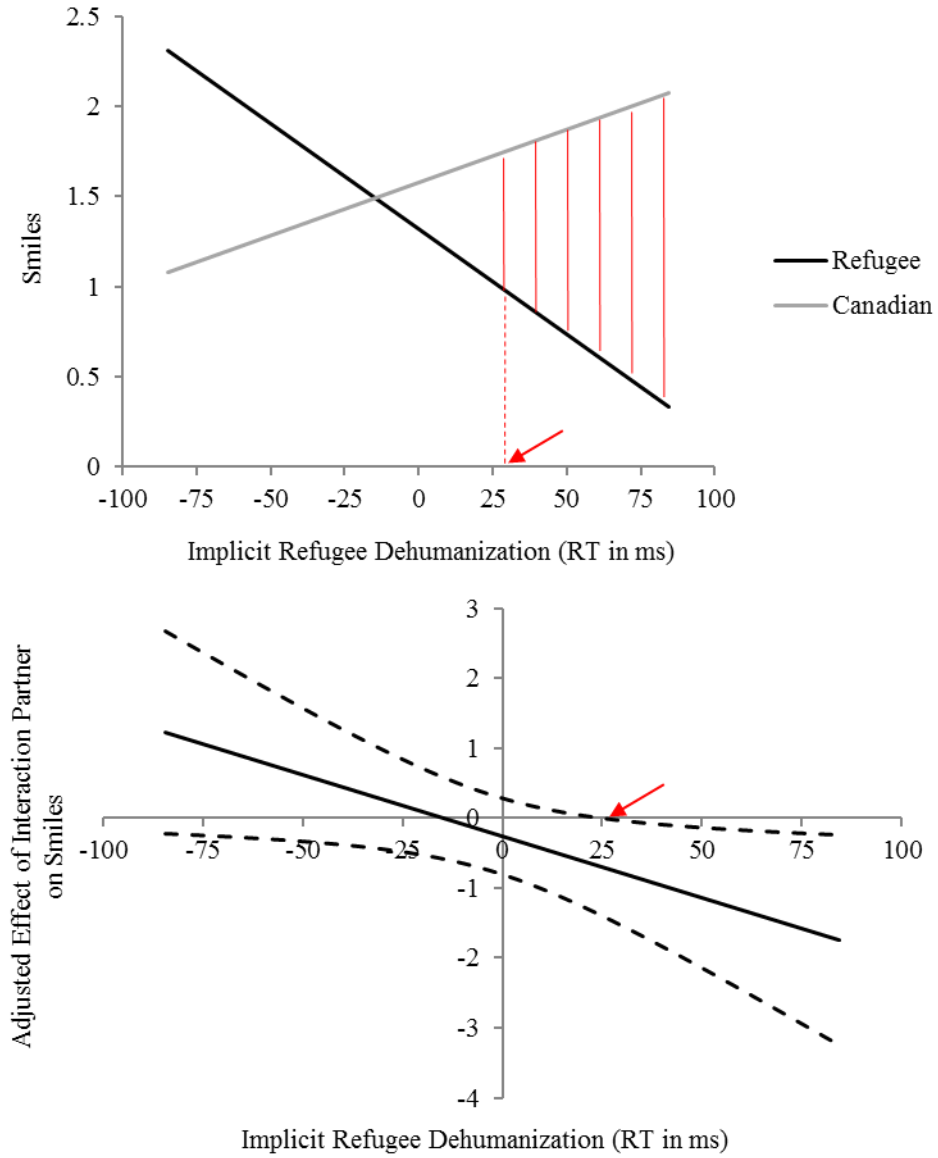


Figure 16. Top: Interaction between type of interaction partner and implicit refugee dehumanization on smiling. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in smiling between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

Finally, the results for smiling also revealed a marginally significant main effect of explicit evaluation of refugees (b = .012, p = .06).

For **frowning**, the results revealed a marginally significant interaction effect between type of interaction partner and implicit refugee dehumanization (b = -.008, p = .08). While none of the simple slopes was significant (refugee: b = -.004, p = .31; and Canadian: b = .005, p = .14), there was a significant difference in frowning between the refugee and Canadian student condition among participants with very high implicit refugee dehumanization scores (see Figure 17). In particular, participants with very high implicit refugee dehumanization scores frowned more in the refugee condition than in the Canadian student condition. Finally, the results for frowning also revealed a significant main effect of implicit Canadian dehumanization (b = .006, p = .05).[13]

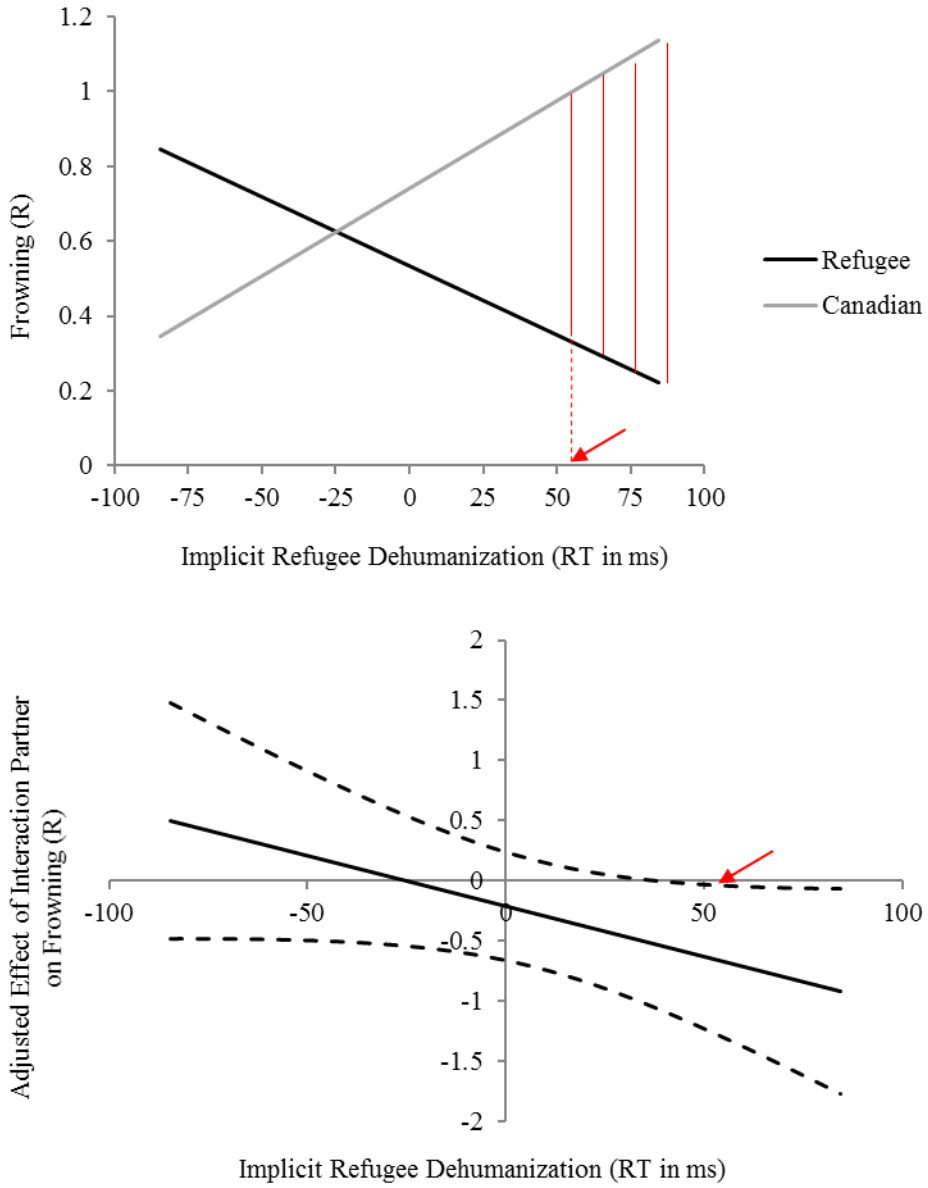


Figure 17. Top: Interaction between type of interaction partner and implicit refugee dehumanization on frowning. The highlighted area indicates significant differences between the regression lines. Please note that frowning was recoded so that higher values represent less frowning. Bottom: Difference in frowning between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

For **adapter use**, the results showed a main effect of implicit Canadian evaluation (b = .007, p = .04). That is, higher implicit Canadian evaluation scores were associated with an increase in adapter use. Furthermore, the results showed a significant interaction between type of interaction partner and implicit refugee dehumanization (b = .018, p = .02) as well as a significant interaction between type of interaction partner and implicit Canadian dehumanization (b = .017, p = .03) on adapter use. The simple slope analyses showed that in the refugee condition there was a marginally significant positive relationship between implicit refugee dehumanization and adapter use (b = .010, p = .06) as well as a marginally significant positive relationship between implicit Canadian dehumanization and adapter use (b = .010, p = .09). This was not the case in the Canadian student condition (implicit refugee dehumanization: b = -.007, p = .14; and implicit Canadian dehumanization: b = -.007, p = .15). Finally, among participants with low implicit refugee dehumanization and implicit Canadian dehumanization scores, there was a significant difference between experimental conditions for adapter use. Participants in the refugee condition used significantly less adapters than participants in the Canadian student condition (see Figures 18 and 19).[14]

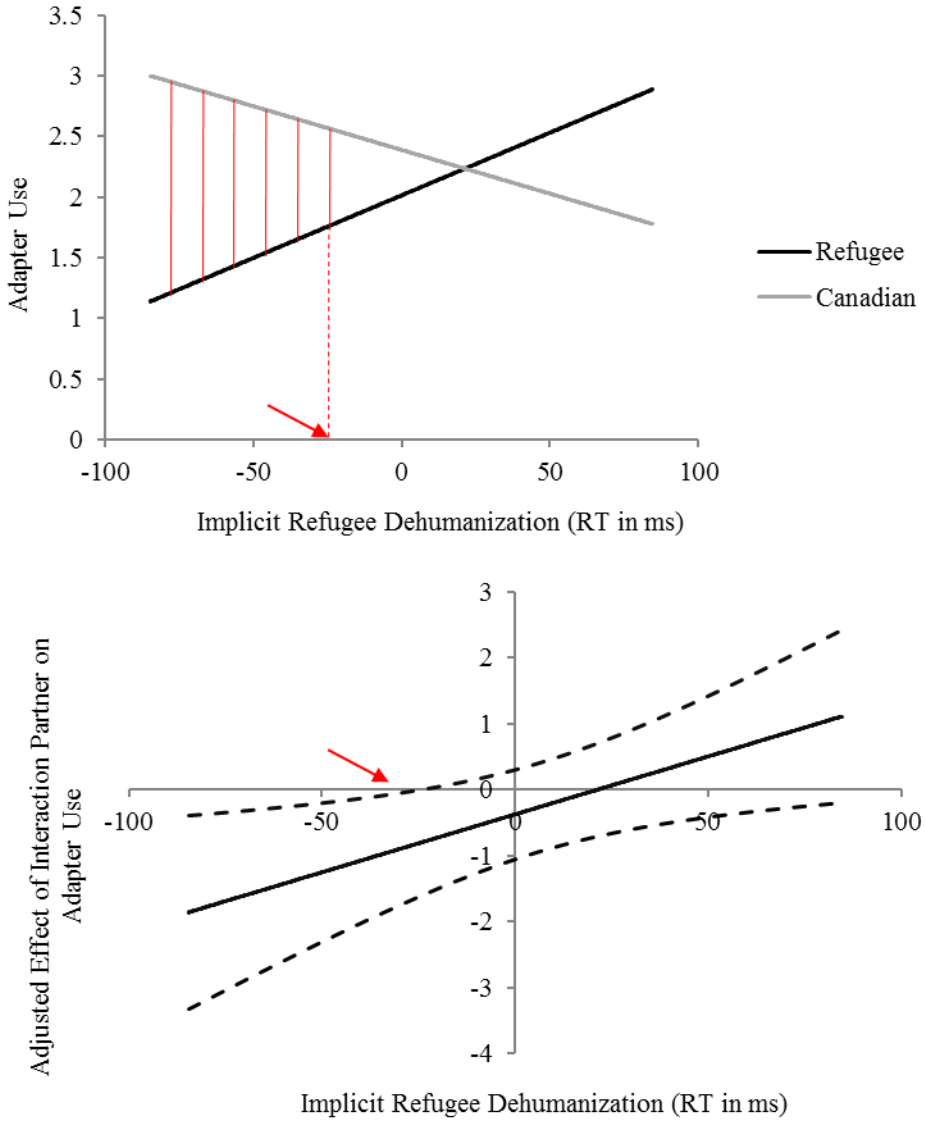


Figure 18. Top: Interaction plot between type of interaction partner and implicit refugee dehumanization on adapter use. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the adapter use between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

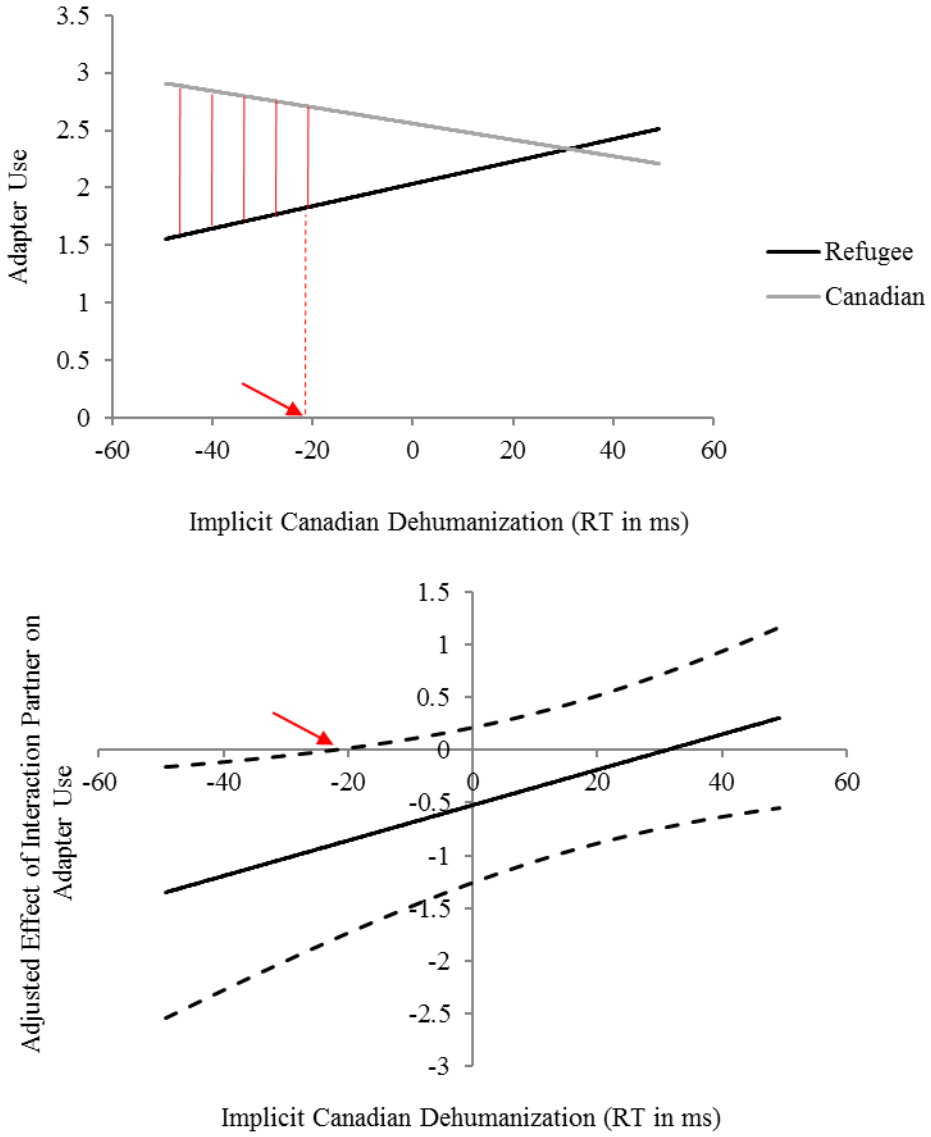


Figure 19. Top: Interaction plot between type of interaction partner and implicit Canadian dehumanization on adapter use. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the adapter use between the refugee and Canadian condition adjusted for participants' implicit Canadian dehumanization scores (dashed lines represent 95% confidence intervals).

Given that both implicit refugee dehumanization and implicit Canadian dehumanization had the same effect on adapter use, I ran another LDS model, which included both predictors and the interaction terms simultaneously. In this model neither the interaction between type of interaction partner and implicit refugee dehumanization

(b = .012, p = .23) nor the interaction between type of interaction partner and implicit Canadian dehumanization (b = .008, p = .41) were significant.[15]

For **facial rigidity**, the results showed a significant main effect of implicit refugee dehumanization (b = .008, p = .04), a significant main effect of categorization task (b = -.014, p = .04), a significant interaction between type of interaction partner and implicit refugee dehumanization (b = -.016, p = .01), and a significant 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task (b = .029, p = .00). Among participants performing the evaluative task, there was a marginally significant negative relationship between implicit refugee dehumanization and facial rigidity in the refugee condition (b = -.008, p = .06), and a significant positive relationship between implicit Canadian dehumanization and facial rigidity in the Canadian student condition (b = .008, p = .04, see Figure 20). Among participants performing the conceptual task, there were no significant relationships between implicit refugee dehumanization and facial rigidity in either experimental condition (refugee: b = .007, p = .12, and Canadian: b = -.006, p = .29, see Figure 21). Finally, among participants who performed the evaluative task, there was a significant difference between experimental conditions for participants with lower and very high implicit refugee dehumanization scores (see Figure 20). That is, participants with lower implicit refugee dehumanization scores had less rigid faces in the refugee condition than in the Canadian student condition, whereas participants with very high implicit refugee dehumanization scores had more rigid faces in the refugee student condition than in the Canadian student condition.

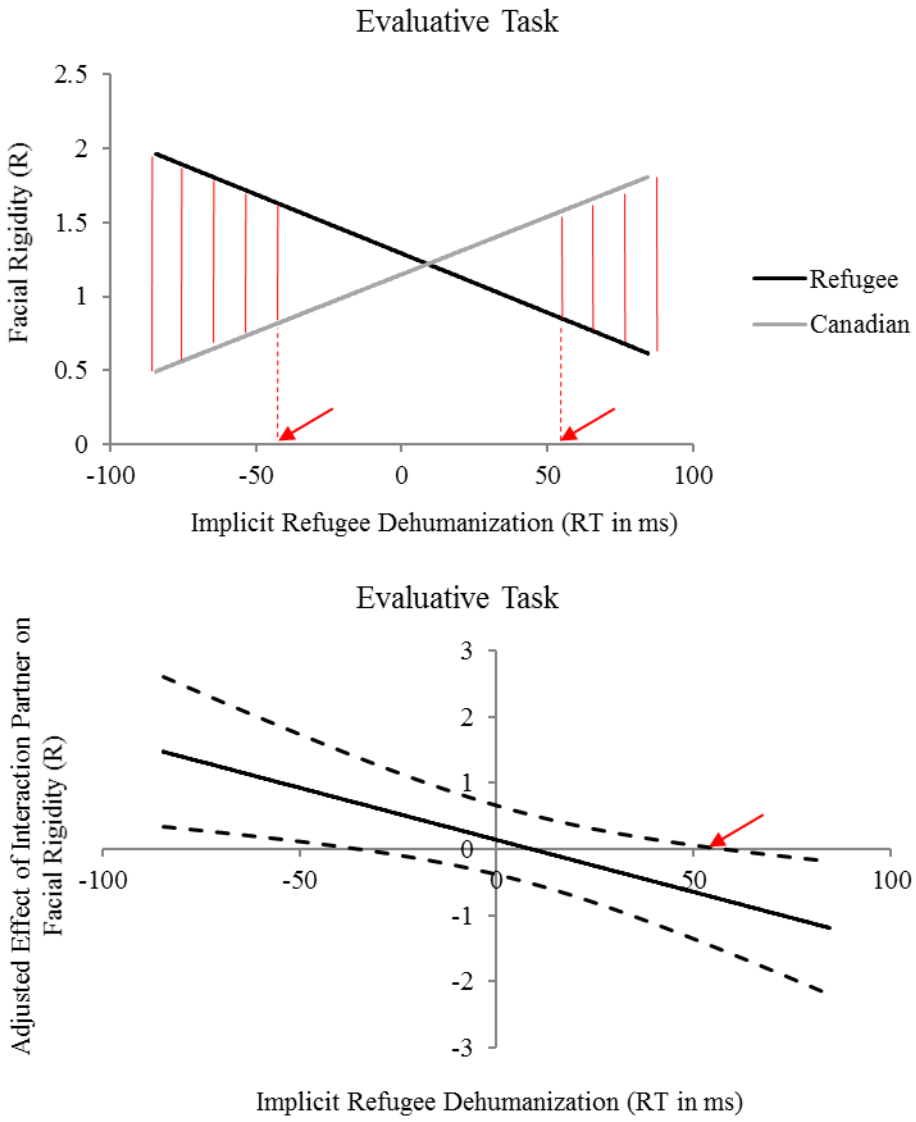


Figure 20. Top: Simple slopes for the 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on facial rigidity (illustrated are the simple slopes for the evaluative categorization task). The highlighted area indicates significant differences between the regression lines. Please note that facial rigidity was recoded so that higher values represent a less rigid face. Bottom: Difference in facial rigidity between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

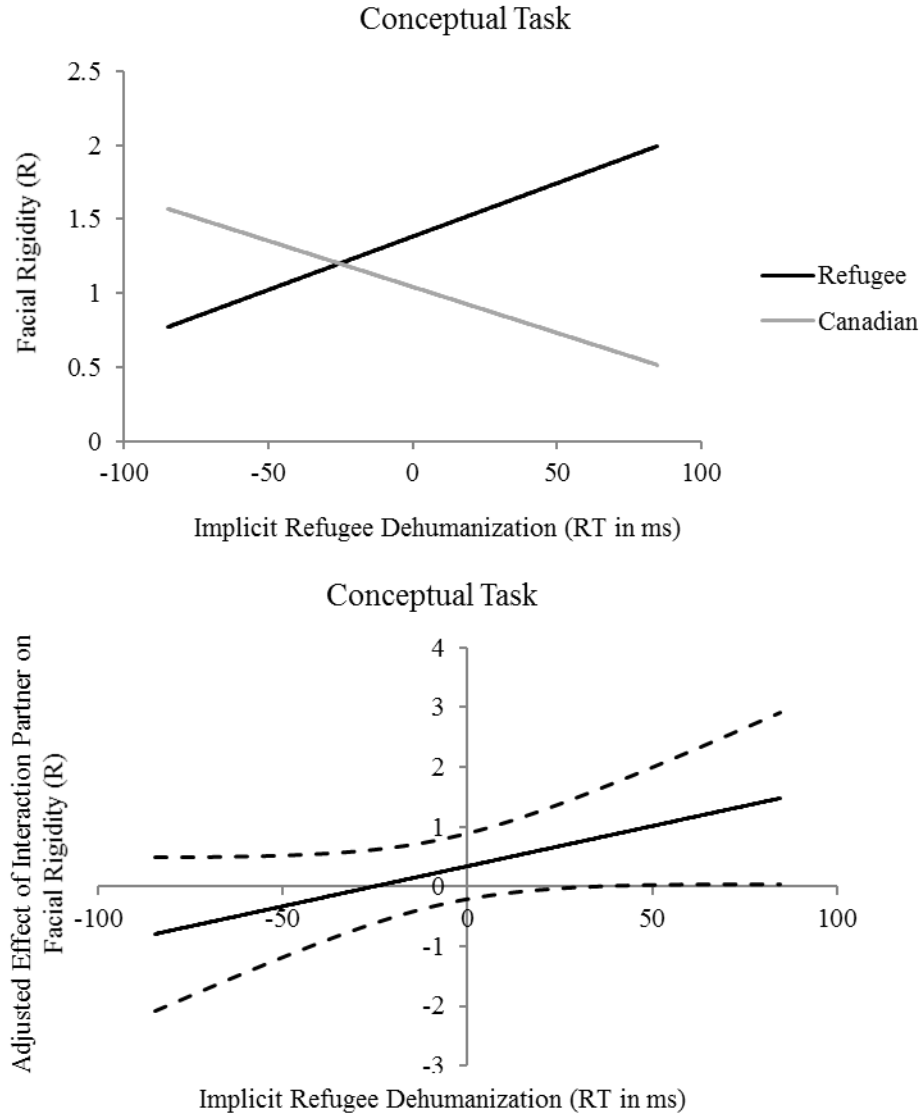


Figure 21. Top: Simple slopes for the 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on facial rigidity (illustrated are the simple slopes for the conceptual categorization task). Please note that facial rigidity was recoded so that higher values represent a less rigid face. Bottom: Difference in facial rigidity between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

The results also showed a significant interaction between type of interaction partner and implicit Canadian dehumanization (b = -.011, p = .06) and a significant 3-way interaction between type of interaction partner, implicit Canadian dehumanization and type of categorization task (b = .020, p = .02) on facial rigidity. However, none of the simple slopes for the 3-way interaction were significant (refugee and evaluative task: b = -.006, p = .16; Canadian and evaluative: b = .004, p = .24, refugee and conceptual: b = .006, p = .13, and Canadian and conceptual: b = -.003, p = .49, see Figures 22 and 23).

Finally, the results showed that participants with more positive explicit attitudes toward refugees had less rigid faces (b = .016, p = .00).

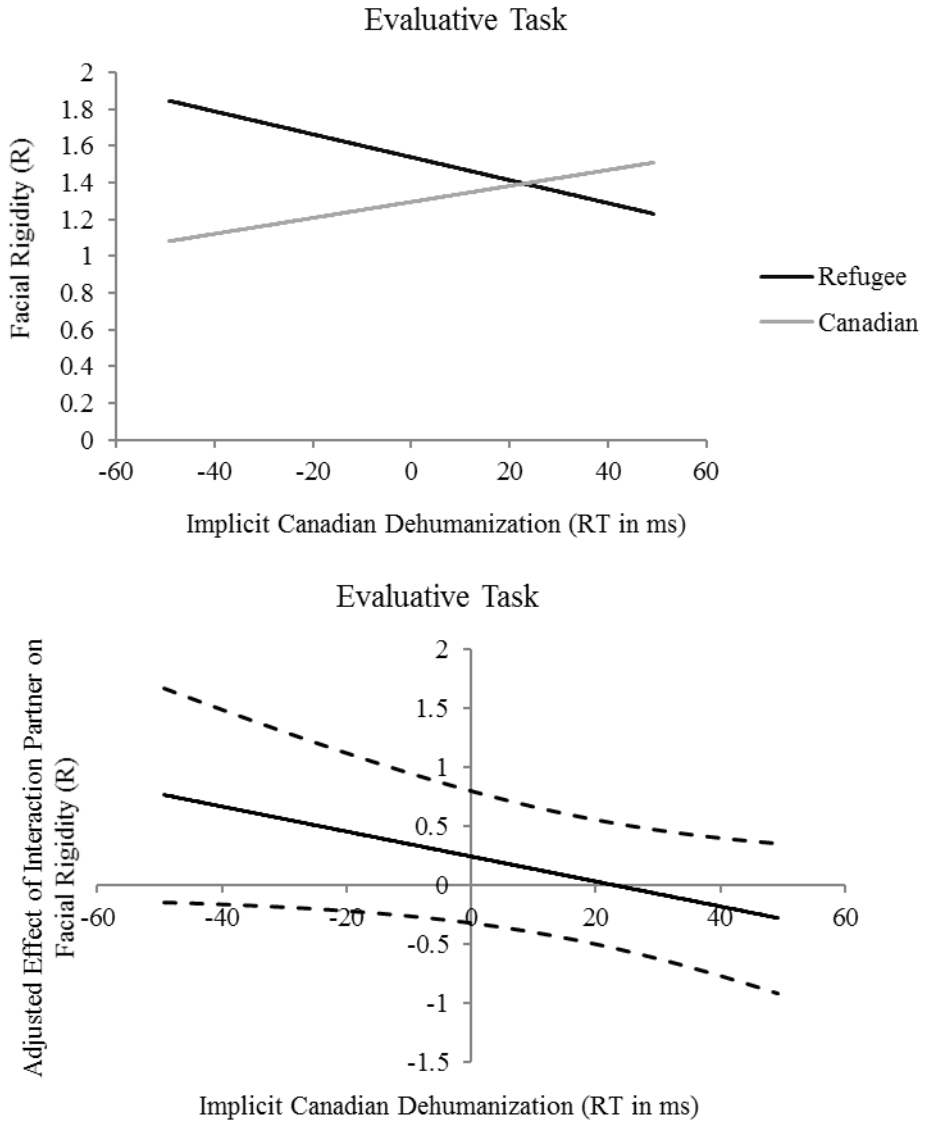


Figure 22. Top: Simple slopes for the 3-way interaction between type of interaction partner, implicit Canadian dehumanization and type of categorization task on facial rigidity (illustrated are the simple slopes for the evaluative categorization task). Please note that facial rigidity was recoded so that higher values represent a less rigid face. Bottom: Difference in facial rigidity between the refugee and Canadian condition adjusted for participants' Canadian dehumanization scores (dashed lines represent 95% confidence intervals).

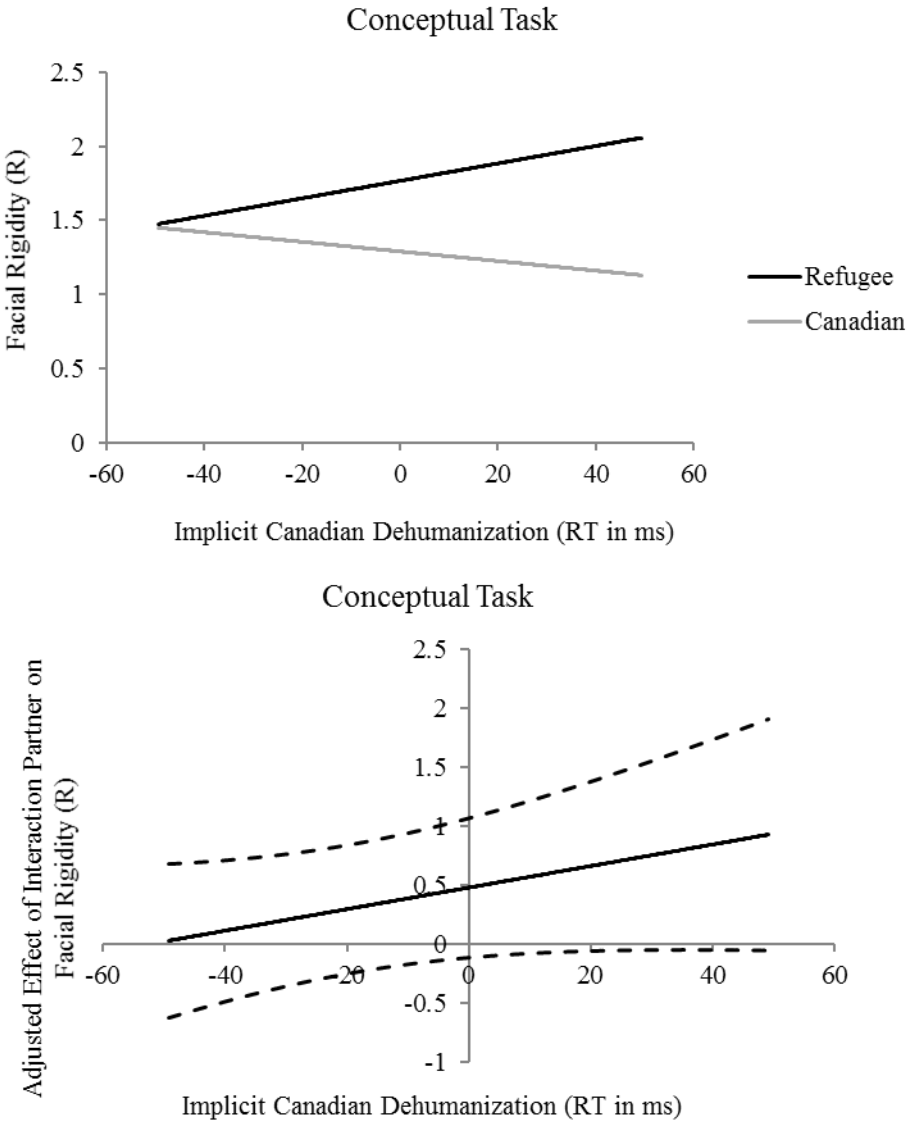


Figure 23. Top: Simple slopes for the 3-way interaction between type of interaction partner, implicit Canadian dehumanization and type of categorization task on facial rigidity (illustrated are the simple slopes for the conceptual categorization task). Please note that facial rigidity was recoded so that higher values represent a less rigid face. Bottom: Difference in facial rigidity between the refugee and Canadian condition adjusted for participants' Canadian dehumanization scores (dashed lines represent 95% confidence intervals).

For **leaning forward**, the results showed significant or marginally significant main effects of implicit Canadian dehumanization (b = .006, p = .05) and implicit

Canadian evaluation (b = .004, p = .07).[16] Finally, there was a significant interaction between type of interaction partner and implicit Canadian evaluation on the change score of leaning forward (b = -.007, p = .03). The simple slope analysis showed that there was a marginally significant positive relationship between implicit Canadian evaluation and leaning forward in the Canadian condition (b = .004, p = .07), but not in the refugee condition (b = -.004, p = .19). Furthermore, among participants with high implicit Canadian evaluation scores there was a significant difference between experimental conditions (see Figure 24). That is, participants with high implicit Canadian evaluation scores were more likely to lean forward in the Canadian student condition than in the refugee condition.

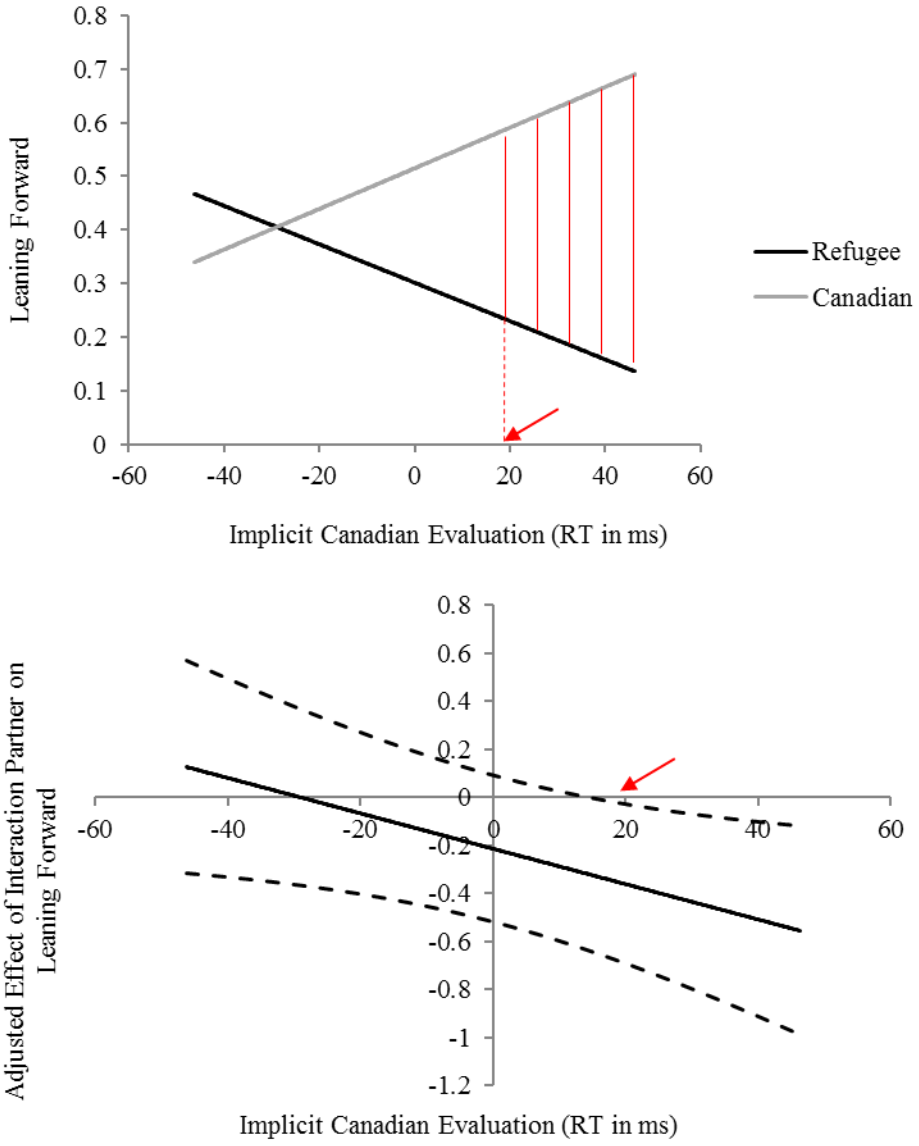


Figure 24. Top: Interaction between type of interaction partner and implicit Canadian evaluation on leaning forward. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in leaning forward between the refugee and Canadian condition adjusted for participants' Canadian evaluation scores (dashed lines represent 95% confidence intervals).

3.3 Discussion

The aim of the analyses covered in this section was to further explore the data and to determine whether specific nonverbal behaviours that are indicative of anxiety or

uneasiness as well as specific nonverbal behaviours that are indicative of happiness or comfort would differ depending on implicit refugee dehumanization and type of interaction partner. Overall, the results covered in this section showed that implicit refugee dehumanization and type of interaction partner influenced some of the specific behaviours. In particular, among participants who performed the evaluative categorization task, there was a significant difference in participants' facial rigidity between experimental conditions for participants with very low and very high implicit refugee dehumanization scores. That is, participants with lower implicit refugee dehumanization scores had less rigid faces in the refugee condition than in the Canadian student condition, whereas participants with very high implicit refugee dehumanization scores had more rigid faces in the refugee student condition than in the Canadian student condition. Furthermore, the results showed that participants with high implicit refugee dehumanization scores were less likely to smile and more likely to frown in the refugee condition than in the Canadian student condition.

Moreover, among participants with low implicit refugee dehumanization scores, there was a significant difference between experimental conditions for adapter use. Participants in the refugee condition used significantly less adapters than participants in the Canadian student condition. However, the same effect appeared for participants with low implicit Canadian dehumanization scores. While this may be surprising, it must be noted that there was a positive correlation between implicit refugee dehumanization and implicit Canadian dehumanization. Also, when implicit refugee dehumanization and implicit Canadian dehumanization were used to simultaneously predict adapter use, the interaction between interaction partner and implicit refugee dehumanization and the interaction between interaction partner and implicit Canadian dehumanization disappeared. This suggests that these were most likely weak effects. Finally, the type of interaction partner and implicit refugee dehumanization did not influence the extent to which participants had closed body postures, leaned forward or fidgeted. As expected, explicit refugee dehumanization did not predict any of the specific behaviours.

The results also revealed significant differences in the display of specific behaviours depending on participants' implicit evaluation of refugees, implicit evaluation

of Canadians and the type of interaction partner. In particular, implicit refugee evaluation predicted closed body posture in the refugee condition, but not in the Canadian condition. That is, in the refugee condition, higher implicit refugee evaluation scores were associated with a more open body posture. Furthermore, participants with lower implicit refugee evaluation scores were more likely to have a closed body posture when interacting with the refugee than when interacting with the Canadian student. Finally, participants with high implicit Canadian evaluation scores were more likely to lean forward in the Canadian student condition than in the refugee condition. The direction of these effects is surprising and the reasons for these effects are unclear.

Chapter 4

4 Research Question 3: Analyses Over Time

So far, the focus of my analyses has been on participants' nonverbal and verbal behaviour as well as specific behaviours averaged across the three time points of the interaction (the beginning, middle and end of the interaction). In the following section, I further explored the data by examining whether participants' nonverbal and verbal behaviour as well as their specific behaviours changed as the interaction unfolded. In particular, the third research question asks whether implicit refugee dehumanization predicts change in nonverbal behaviour (based on adjective ratings) and change in specific nonverbal behaviours, and whether explicit refugee dehumanization predicts change in verbal behaviour.

Before addressing each of these questions, I will review Hebl and Dovidio's (2005) Model of Mixed Social Interactions to provide a general framework that helps to understand how a social interaction between two individuals unfolds. In particular, the model refers to mixed social interactions with a stigmatizer and a stigmatized person, also referred to as the target. The model proposes that both individuals go through three main sequential stages as the interaction unfolds: 'antecedents' stage, 'pre-interaction' stage and 'interaction' stage. In the first stage, the model differentiates between three types of antecedents: personal, experiential, and relational-situational antecedents. Personal antecedents include individual difference variables, such as an individual's implicit tendency to stigmatize the target or, relevant to this research, an individual's tendency to dehumanize refugees. Experiential antecedents refer to an individual's past experiences with the target (or with the stigmatizer from the target's perspective). Finally, relational-situational antecedents refer to those variables that characterize the relation between both individuals (e.g., type of relationship, power differentials in the relationship) as well as situational variables (e.g. social norms or cultural norms of acceptance). These three antecedents directly influence several 'pre-interaction mediators'. That is, these three antecedents directly influence what kind of stereotypes and cognitions individuals hold and also what kind of affective reactions, arousal levels and behavioural dispositions

these individuals are most likely to show and activate. Furthermore, the antecedents also influence individuals' motivations and goals for the social interaction. For example, stigmatizers may be motivated to appear unprejudiced and targets may be motivated to avoid the stigmatization process altogether.

Finally, all these pre-interaction mediators directly influence both individuals' verbal and nonverbal behaviours during the initial interaction phase. For example, individuals who implicitly dehumanize refugees may be more likely to monitor and control their verbal responses toward a refugee. Because this is most likely to demand high cognitive resources, the expression of more spontaneous nonverbal behaviours may be facilitated (Gilbert & Hixon, 1991). That is, these individuals' tendency to implicitly dehumanize refugees may be expressed in nonverbal behaviours. Importantly, Hebl and Dovidio's (2005) Model of Mixed Social Interactions also proposes a second interaction phase during which both individuals assess themselves, each other, and the interaction based on the already displayed verbal and nonverbal behaviours. In particular, both individuals are thought to assess whether their goals for the interaction have been met and also to assess their interaction partner. The assessment of their interaction partner may then result in a potential revision, creation or reinforcement of implicit and explicit attitudes regarding their partner or the group that the partner belongs to. Besides these assessments, both individuals may also engage in a cost-benefit analysis to assess the outcomes of the social interaction. Eventually both individuals decide on whether they want to continue or end the interaction. Regardless of whether the interaction is continued or terminated, the model also proposes that every experience during a social interaction is very likely to impact future interactions by impacting the antecedent and pre-interaction variables mentioned in the model.

While the model does not make any specific predictions, it illustrates the dynamic nature of a social interaction in that it considers both individuals in the interaction. Furthermore, the model considers how a social interaction can evolve over time. For example, individuals who implicitly dehumanize refugees may be more likely to experience negative affect and high levels of arousal when encountering a refugee. As a result, individuals may monitor and control their verbal behaviour to appear in a friendly

way. At the same time, they may not be able to control their less friendly nonverbal behaviour. As the interaction unfolds, individuals may then either reinforce or change their impressions about the refugee, which, in turn, is expressed in the individual's experienced affect, level of arousal and behaviour.

In fact, a similar trajectory may be expected based on the principles outlined in the reflective-impulsive model of social behaviour (Strack & Deutsch, 2004). In the impulsive system, participants' individual differences, past experiences with the target as well as situational influences are likely to influence which elements of the associative network are activated. Furthermore, depending on the activated elements in the associative network two different motivations may be guiding behaviour: an approach or avoidance motivation. The approach motivation facilitates the processing of positive information, the experience of positive affect and the execution of approach behaviour. In contrast, the avoidance motivation facilitates the processing of negative information, the experience of negative affect and the execution of avoidant behaviour. Participants who implicitly dehumanize refugees may most likely be guided by an avoidant motivation and may thus be more likely to process the negative information available in the interaction context and to experience negative affect. Unless other, positive elements become activated during the interaction, it is unlikely that the individual will experience a change in affect and change his or her nonverbal behaviour toward the refugee.

It was hypothesized that at least at the beginning of the interaction, participants who implicitly dehumanize refugees would be more likely to display less positive nonverbal behaviours toward a refugee than a Canadian and that participants who explicitly dehumanize refugees would be more likely to display less positive verbal behaviour toward a refugee than a Canadian. It was also expected that participants who implicitly dehumanize refugees would be more likely to display specific nonverbal behaviours that are indicative of anxiety or uneasiness and less likely to display specific nonverbal behaviour that are indicative of happiness or comfort. However, the predictions regarding any change in participants' behaviour over time are less clear-cut. Depending on participants' assessment of their interaction partner and the interaction,

participants may either reinforce or change their behaviour toward their interaction partner.

4.1 Adjective Ratings

4.1.1 Method

The analyses covered in this section are based on the same thin slices that were extracted and coded to analyse the first research question (see pages 25 to 27). The only difference is that for the analyses over time, the dependent variables for nonverbal behaviour (positive behaviour, positive interaction, overall positivity and overall negativity) are no longer averaged across T3, T4 and T5.

4.1.2 Results

Analytic Method for Analyses over Time. To examine whether participants' nonverbal and verbal behaviours change from the beginning to the end of the interaction, and to examine whether implicit and explicit refugee dehumanization predict participants' nonverbal and verbal behaviour at the beginning of the interaction and whether implicit and explicit refugee dehumanization predict any change in participants' nonverbal and verbal behaviour during the interaction, I ran a series of latent growth models (LGMs). A latent growth model is a statistical method that allows one to model between-person differences in within-person change (Curran, Obeidat, & Losardo, 2016). That is, a latent growth model allows one to estimate the mean starting point (intercept) and the mean rate of change (slope) of participants' nonverbal and verbal behaviour as well as variations in participants' starting points and rates of change. Furthermore, as in any model, additional predictors can be added to the model to test whether they predict the starting point (intercept) and the rate of change (slope) of participants' nonverbal and verbal behaviour. Across all models, participants' baseline measure was included as a predictor of the intercept to account for participants' different levels of expressiveness or style in their nonverbal and verbal behaviours (Gallaher, 1992).

When running the latent growth models, several issues had to be taken into consideration. First, one question concerned whether participants' baseline measure

should also predict the slope, that is, the extent to which participants' nonverbal and verbal behaviour changes over time. It was expected, that participants' baseline measure would play a role in predicting participants' behaviour at the beginning of the interaction (the intercept), but not in predicting the extent to which their behaviour changes over time (the slope). That is, it was expected that participants' rate of change in their nonverbal and verbal behaviour would not be influenced by their individual expressiveness or style. Second, another question concerned whether the intercept and the slope of the latent growth model should be allowed to correlate or not. To test these two issues, I ran eight different types of models for each dependent variable (positive behaviour, positive interaction, overall positivity and overall negativity; see Table 5).

Table 5
Overview of Types of Latent Growth Models

Model	**Description**
Model 1	− The baseline predicts the intercept and the slope − The correlation between the intercept is estimated − No other predictors
Model 2	− The baseline predicts the intercept − The correlation between the intercept is estimated − No other predictors
Model 3	− The baseline predicts the intercept − The correlation between the intercept is <u>not</u> estimated − No other predictors
Model 4	− The baseline predicts the intercept − The correlation between the intercept is estimated − The intercept and the slope are regressed on a key predictor
Model 5	− The baseline predicts the intercept − The correlation between the intercept is <u>not</u> estimated − The intercept and the slope are regressed on a key predictor
Model 6	− The baseline predicts the intercept − The correlation between the intercept is estimated − Only the intercept is regressed on a key predictor
Model 7	− The baseline predicts the intercept − The correlation between the intercept is <u>not</u> estimated − Only the intercept is regressed on a key predictor

Model 8	– The baseline predicts the intercept – Intercept only model

The first three models, are latent growth models that do not include any of the key predictors in this study (e.g., implicit refugee dehumanization and explicit refugee dehumanization). Model 1 is a latent growth model that includes participants' baseline measure as a predictor of the intercept and the slope. Model 2 is a latent growth model that includes participants' baseline measure as a predictor of the intercept only. Both these models allow for a correlation between the intercept and the slope. Model 3 is the same latent growth model as model 2 without the correlation between the intercept and the slope. Models 4 to 8 all include one of the key predictors (e.g., implicit refugee dehumanization and explicit refugee dehumanization). In particular, in models 4 and 5 both the intercept and the slope are regressed on a key predictor. The difference between these models is that model 4 also estimates the correlation between the intercept and the slope, while model 5 does not. In models 6 and 7 only the intercept is regressed on a key predictor. The difference between these models is that model 6 also estimates the correlation between the intercept and the slope, while model 7 does not. Finally, model 8 is an intercept only model with one of the key predictors. That is, in model 8 the slope is not estimated. All latent growth models were based on the following three timepoints: beginning of the main interaction (T3), middle of the main interaction (T4) and end of the main interaction (T5). The slope was scaled so that T3 was '0', T4 was '1' and T5 was '3'. The analyses were conducted with Mplus 7.0 (Muthén & Muthén, 2012) using maximum likelihood estimation. Finally, to ease the readers' interpretation of the results, if not noted otherwise, the model fit of the reported models was deemed acceptable/good and will not specifically be mentioned in the results section. A detailed description of all the can be found in the Annex.

Nonverbal Behaviour. Overall, the latent growth models 1 to 3 for participants' nonverbal behaviour (across all dependent variables, see Tables 49 to 52 in the Annex) showed that the baseline measure predicted the intercept (b = .37 to .53, p = .00), but not the slope (b = -.001 to .03, p = .47 to .99). That is, participants' individual expressiveness or style of nonverbal behaviour predicted their behaviour at the beginning of the interaction, but did not predict the rate of change in their nonverbal behaviour.

Furthermore, the results showed that the mean slope was significant for positive behaviour (b = .08, p = .00), positive interaction (b = .10, p = .01) and overall negativity (b = -.11, p = .02), and marginally significant for overall positivity (b = .08, p = .07 and .09). This suggests that on average participants' nonverbal behaviour became more positive as the interaction unfolded. However, across most models there was no significant variation in the slope across the dependent variables (b = .01 to .06, p = .13 to .72, with the exception of model 2 for overall positivity where b = .14, p = .04). Finally, the results showed that the correlation between the intercept and the slope was not significant (b = -.04 to -.11, p = .15 to .65). That is, there was no significant relationship between participants' starting levels of nonverbal behaviour and their rate of change in nonverbal behaviour.

Before presenting the results of the remaining models for each dependent variable separately, it is important to note that the intercept only models with one of the key predictors (all models 8) revealed results that are consistent with the results reported based on the latent difference score analysis used to address Research Question 1. For example, the latent growth model for positive behaviour with implicit refugee dehumanization as the key predictor showed a significant interaction effect between type of interaction partner (refugee versus Canadian) and implicit refugee dehumanization (b = -.01, p = .05). Similar to the latent difference score analysis, a simple slope analysis showed that neither of the simple slopes was significant (refugee: b = -.003, p = .23, Canadian: b = .004, p = .11). However, the difference in positive behaviour toward the refugee and the Canadian student increased as participants' scores for implicit dehumanization increased (see Figure 25). Given that the results found in all models 8 have already been described in detail based on the latent difference score analyses, I will now focus on the results of models 4 to 5[17]. In particular, for each dependent variable the focus will be in reporting whether the key predictors (implicit refugee dehumanization, implicit Canadian dehumanization, implicit refugee evaluation, implicit Canadian evaluation, explicit refugee dehumanization and explicit evaluation of refugees) significantly predict the intercept and/or slope of the latent growth models.

For positive behaviour, the results showed that there was a main effect of implicit refugee dehumanization on the slope (b = .002, p = .03 and .04) and a main effect of type of interaction partner on the intercept (b = -.247 to -.403, p = .01 to .04[18]). There was also a marginally significant interaction between type of interaction partner and implicit Canadian dehumanization on the intercept in model 5 (b = -.007, p = .08), but not in model 4 (b = -.006, p = .15). The simple slope analysis for model 5 showed that there was a marginally significant relationship between implicit Canadian dehumanization and positive behaviour in the refugee condition (b = -.006, p = .06), but not in the Canadian condition (b = .001, p = .64). Also, the two regression lines differed significantly from each other for participants with an implicit dehumanization score that was approximately 20 or higher (see Figure 26).[19]

For positive interaction, the results showed a main effect of type of interaction partner on the intercept (b = -.38 to -.48, p = .01 to .04). No other effects were significant.[20]

For overall positivity, the results showed a significant main effect of implicit Canadian evaluation on the intercept (b = -.006, p = .02). No other effects were significant[21].

For overall negativity, the results showed a significant or a marginally significant main effect of implicit refugee dehumanization on the intercept (b = -.007 and -.006, p = .08 and .09) and the slope (b = -.004, p = .02 and .03), as well as a marginally significant main effect of Canadian evaluation on the intercept (b = .004, p = .08 and .09).[22]

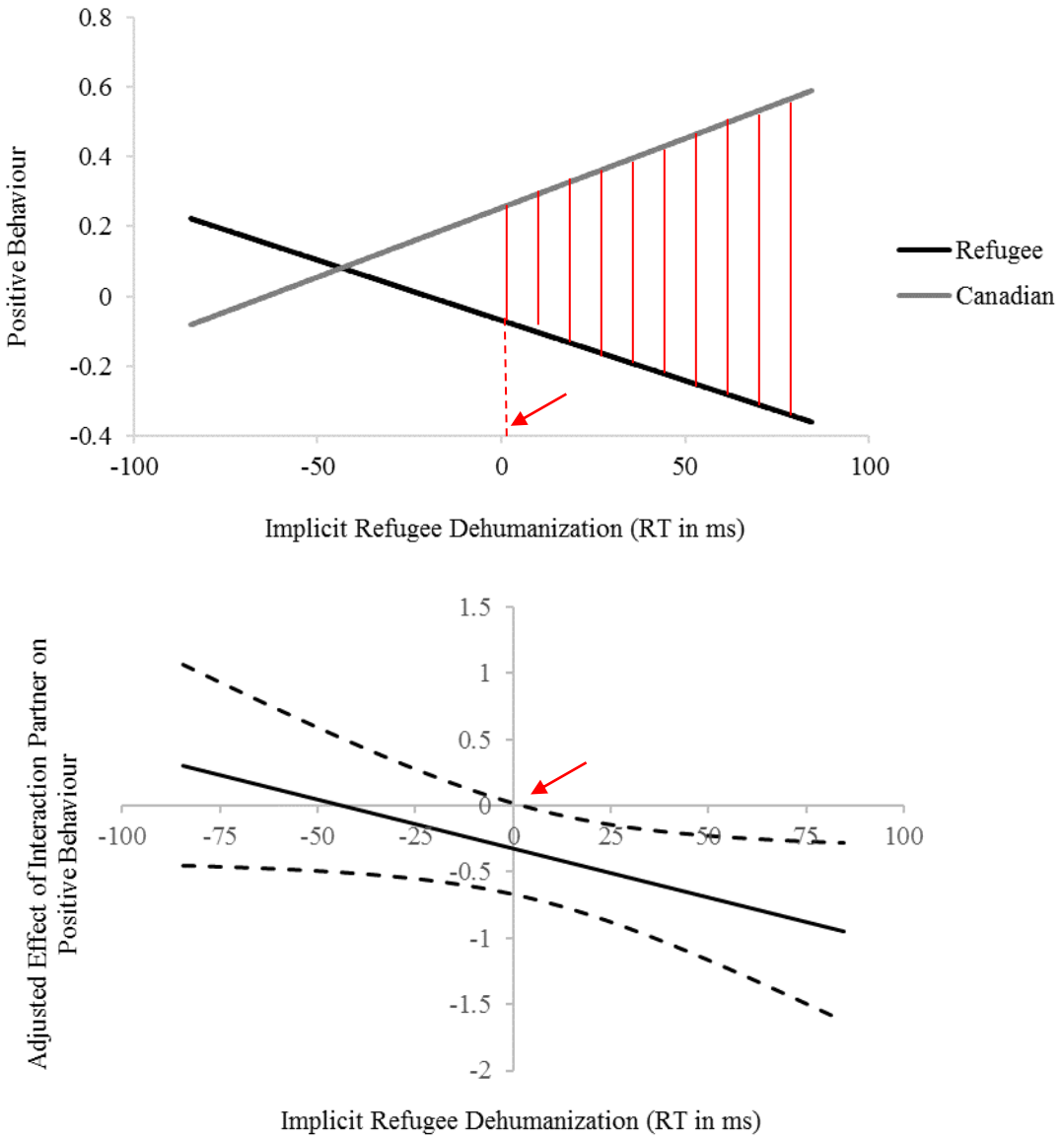


Figure 25. Top: Interaction between implicit refugee dehumanization and type of interaction partner on positive behaviour (based on video coding). Highlighted area indicates significant differences between the regression lines. Bottom: Difference in positive nonverbal behaviour scores between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score (dashed lines represent 95% confidence intervals).

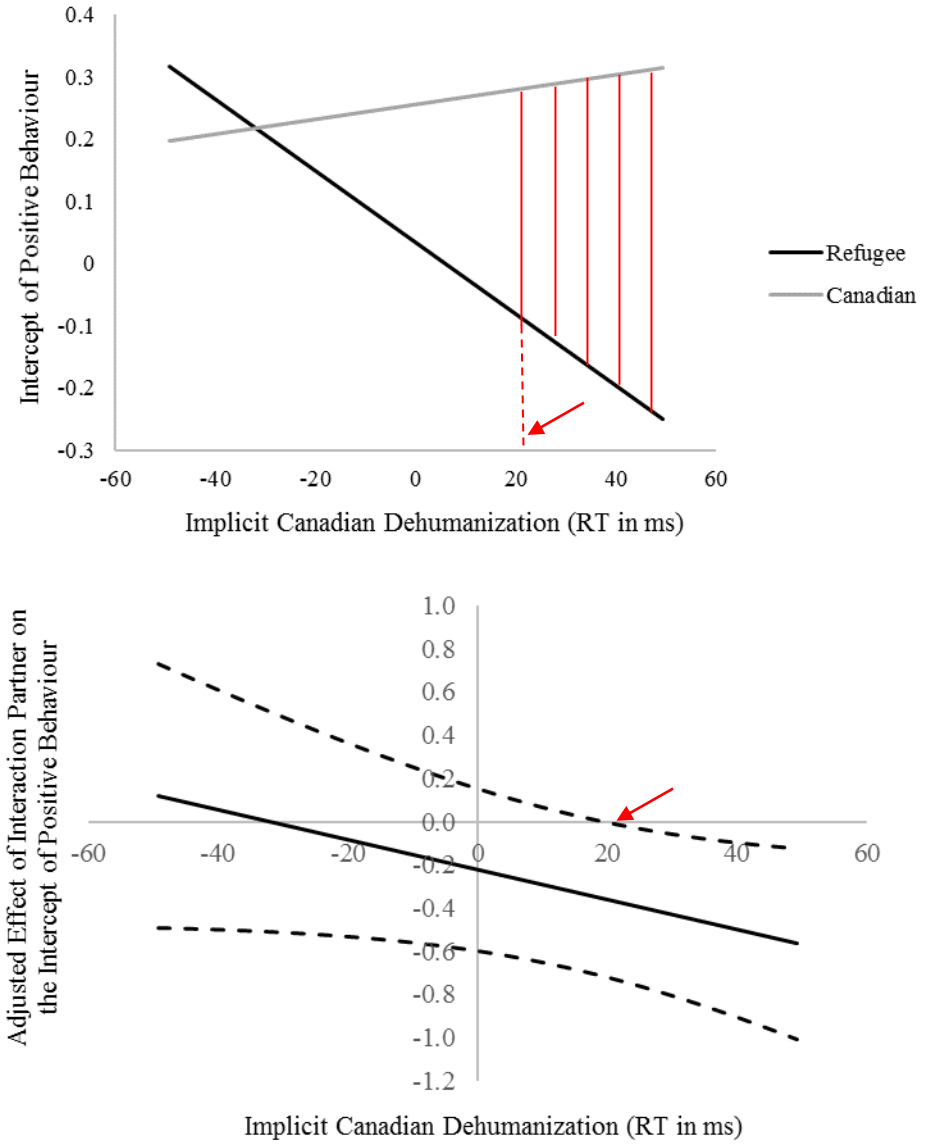


Figure 26. Top: Interaction between implicit Canadian dehumanization and type of interaction partner on the intercept of positive behaviour (based on video coding). The highlighted area indicates significant differences between the regression lines. Bottom: Difference in positive nonverbal behaviour scores between the refugee and Canadian condition adjusted for participants' implicit Canadian dehumanization score (dashed lines represent 95% confidence intervals).

Verbal Behaviour. Similar to the results based on participants' nonverbal behaviour, the results of the latent growth models 1 to 3 for participants' verbal

behaviour showed that the baseline measure predicted the intercept (b = .41 to .54, p = .00), but not the slope (b = -.06, p = .32[23]). Furthermore, the results showed that the mean slope was marginally significant only for positive behaviour (b = .04, p = .08 and .09). The mean slope for the other dependent variables was either not significant or could not be interpreted due to a not positive definite residual covariance matrix of the models. Also, the variation in the slope for positive behaviour, positive interaction and overall negativity was not significant (b = .006 to .033, p = .50 to .11; the models for overall positivity could not be interpreted due to the not positive definite residual covariance matrix of the models). Finally, the results of models 1 and 2 for positive behaviour showed that the correlation between the intercept and the slope was not significant (b = -.03, p = .18 and .20; all other models could not be interpreted). The results of models 4, 6 and 7 either supported these findings (the findings regarding the mean slope and the correlation between the intercept and slope) or produced not positive definite residual covariance matrices that could not be interpreted. Similar to the results based on participants' nonverbal behaviour, the results of all the intercept only models (model 8) supported the findings of the latent difference score analyses for Research Question 1 based on participants' verbal behaviour. For ease of interpretation, the focus of the results presented in the following paragraphs will therefore be on the results for model 4 (where possible) and model 5. In particular, the focus will be on examining whether the key predictors (implicit refugee dehumanization, implicit Canadian dehumanization, implicit refugee evaluation, implicit Canadian evaluation, explicit refugee dehumanization and explicit evaluation of refugees) significantly predict the intercept and/or the slope of all dependent variables.

For positive behaviour, the results showed a main effect of type of interaction partner on the slope in the models that include either implicit refugee dehumanization or implicit Canadian dehumanization as the main predictor (b = -.12 to -.13, p = .03 and .04)[24]. Furthermore, for the models with implicit Canadian dehumanization as the key predictor, there was also a marginally significant main effect of type of interaction partner on the intercept (b = .28, p = .06 and .07)[25]. Furthermore, the results also revealed a marginally significant interaction between type of interaction partner and implicit Canadian dehumanization on the intercept (b = -.005, p = .09 and p = .10).

Neither of the simple slopes was significant (refugee: b = -.002, p = .39; and Canadian: b = .003, p = .13). However, there was a significant difference between the refugee condition and the Canadian condition among participants with lower implicit Canadian dehumanization scores (approximately a score of – 9.0, see Figure 27). Finally, implicit refugee evaluation significantly predicted the intercept of positive behaviour (only in model 4: b = .002, p = .02; model 5: b = .001, p = .26) and the slope of positive behaviour (b = -.001, p = .01).

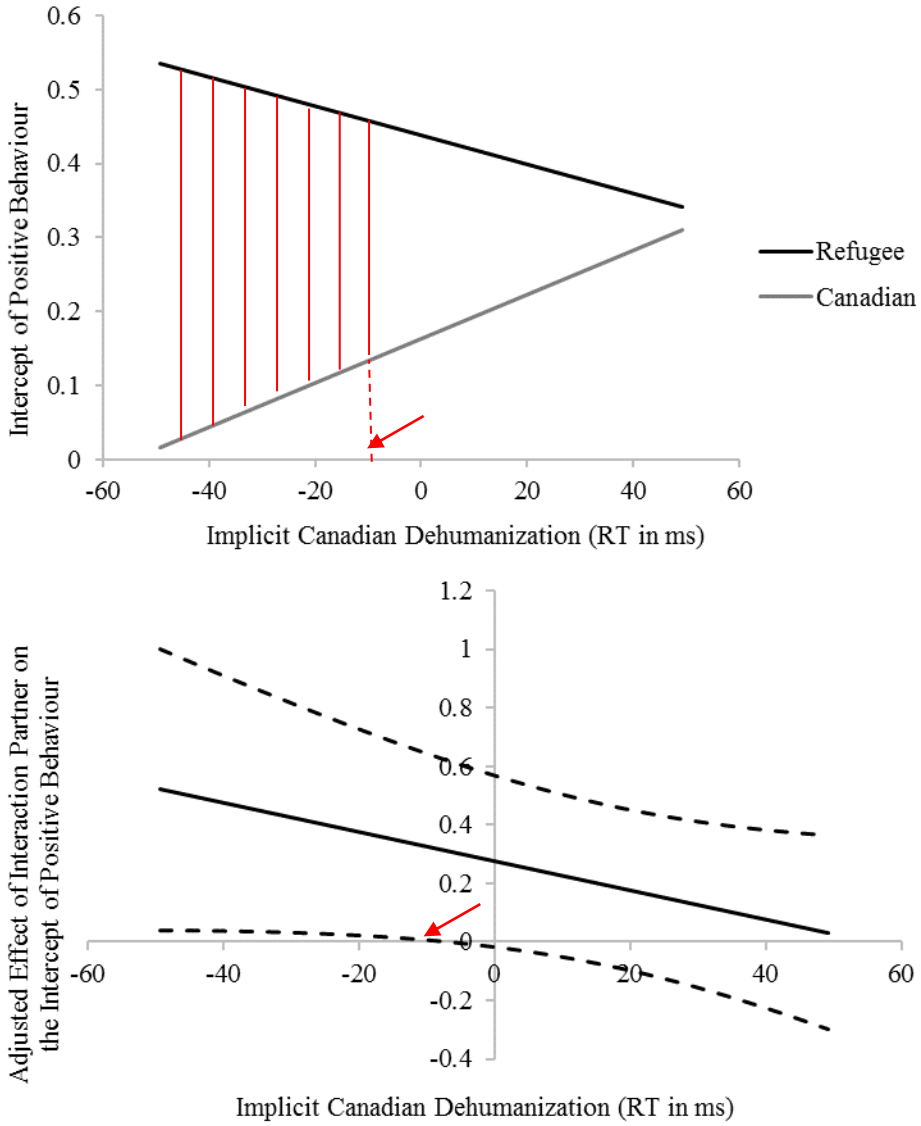


Figure 27. Top: Interaction between implicit Canadian dehumanization and type of interaction partner on the intercept of positive behaviour (based on audio coding). The highlighted area indicates significant differences between the regression lines. Bottom: Difference in positive verbal behaviour scores between the refugee and Canadian condition adjusted for participants' implicit Canadian dehumanization score (dashed lines represent 95% confidence intervals);

For positive interaction, the results showed a significant main effect of implicit dehumanization on the intercept (b = .006, p = .03)[26]. Furthermore, the results also showed a marginally significant interaction effect between type of interaction partner and

task on the slope (b = .26, p = .08), as well as a marginally significant interaction effect between type of interaction partner, task and implicit refugee dehumanization on the slope (b = -.006, p = .09). The simple slope analysis showed that there was a negative relationship between implicit refugee dehumanization and the slope only when participants interacted with a refugee and also performed the conceptual categorization task (b = -.004, p = .04). That is, as participants' scores for implicit refugee dehumanization increase the slope changes from being positive to being negative (see Figure 29). That is, at one point, when implicit refugee dehumanization scores are increasingly positive, the interaction ceases to become more positive over time, and in fact, becomes less positive over time. Furthermore, among participants with low implicit refugee dehumanization scores there is a significant difference in the slope of positive interaction between experimental conditions. Among these participants, the slope for positive interaction is more positive in the refugee condition than in the Canadian student condition. The other simple slopes were not significant (refugee and evaluative task: b = .002, p = .34; Canadian and evaluative task: b = .001, p = .56, Canadian and conceptual: b = -.005, p = .10, see also Figures 28 and 29).

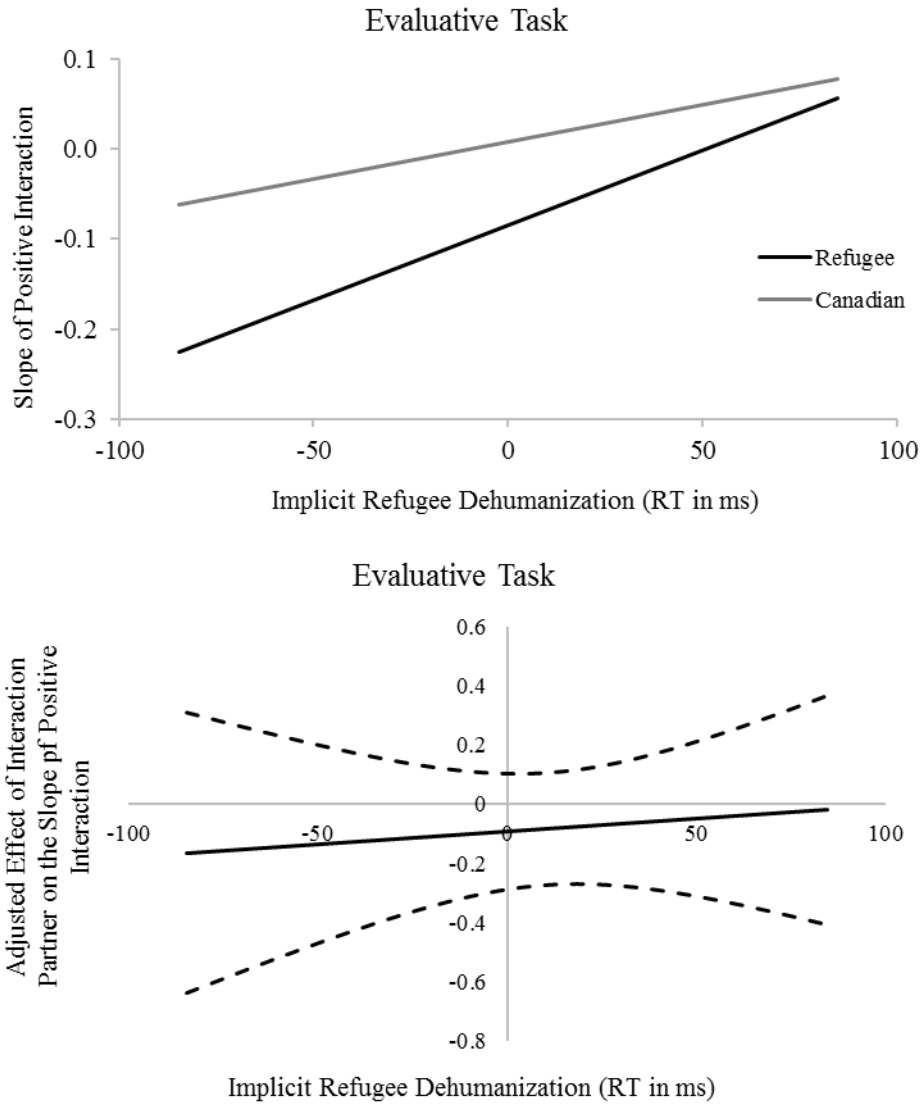


Figure 28. Top: Simple slopes for the 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on the slope of positive interaction (illustrated are the effects for the evaluative categorization task). Bottom: Difference in positive interaction scores (based on audio coding) between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score (dashed lines represent 95% confidence intervals).

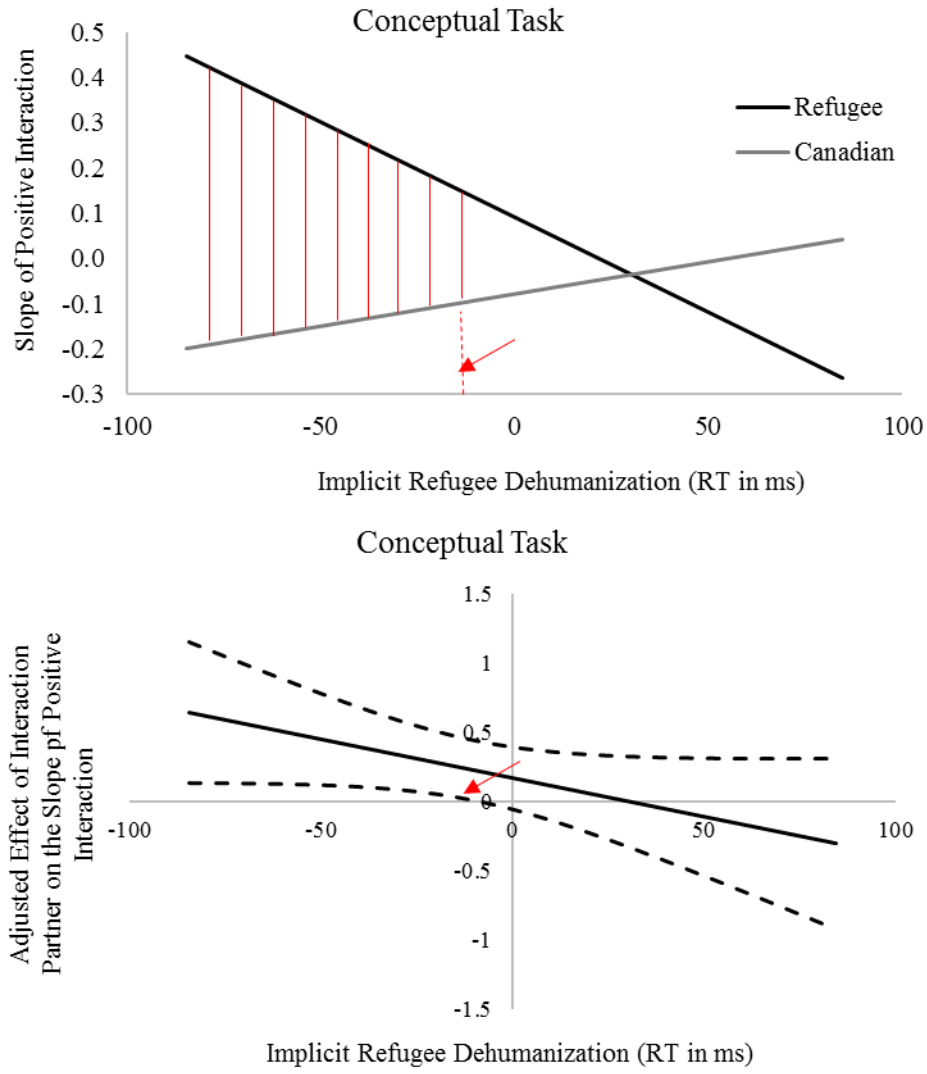


Figure 29. Top: Simple slopes for the 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on the slope of positive interaction (illustrated are the effects for the conceptual categorization task). The highlighted area indicates significant differences between the regression lines. Bottom: Difference in positive interaction scores (based on audio coding) between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization score (dashed lines represent 95% confidence intervals).

For overall positivity, only the intercept only model (model 8) could be interpreted. The other models all produced not positive definite residual covariance matrices. The only exception was model 4 with implicit refugee dehumanization as the key predictor. In this model type of interaction partner (b = .58, p = .00) and implicit refugee dehumanization (b = .005, p = .09) had a significant respectively a marginally significant effect on the intercept.[27]

For overall negativity, the results showed that models 4 and 6, which allowed for the correlation between the slope and the intercept, could not be interpreted. The results for model 5 showed a marginally significant main effect of type of interaction partner (b = .16, p = .08 and .09) and implicit dehumanization (b = -.002, p = .09) on the slope.[28] Furthermore, the results also revealed a significant main effect of implicit Canadian dehumanization on the intercept (b = -.005, p = .02).[29] Finally, there was a marginally significant main effect of implicit refugee evaluation on the slope (b = .002, p = .06).

4.1.3 Discussion

The goal of research question 3 was to test whether participants' nonverbal and verbal behaviour changed as the interaction unfolded as well as to examine whether implicit and explicit refugee dehumanization predicted any change in nonverbal and verbal behaviour. While there were no clear cut expectations regarding participants' change in nonverbal and verbal behaviour, it was expected that in the beginning of the interaction participants who implicitly dehumanized refugees would be more likely to display less positive nonverbal behaviours toward a refugee than a Canadian and that participants who explicitly dehumanized refugees would be more likely to display less positive verbal behaviour toward a refugee than a Canadian.

In terms of participants' nonverbal and verbal behaviour at the beginning of the interaction, the results covered in this section mirrored those covered under research question 1. That is, as expected, at the beginning of the interaction, participants with higher implicit dehumanization scores showed less positive nonverbal behaviour toward a refugee than a Canadian student. Furthermore, at the beginning of the interaction, participants with higher implicit dehumanization scores did not differ in their verbal

behaviour toward a refugee compared to the Canadian student. Finally, consistent with the results discussed in the section covering research question 1, at the beginning of the interaction there was mixed evidence regarding the effect of explicit refugee dehumanization on verbal behaviour toward a refugee. On the one hand, the results showed that the quality of the interaction based on participants' verbal behaviour tended to be lower for the refugee interaction than the Canadian interaction for participants who explicitly dehumanized refugees. On the other hand, explicit refugee dehumanization did not predict participants' verbal behaviour during the interaction.

As the interaction unfolded, participants' nonverbal behaviour became, on average, more positive. However, participants' verbal behaviour did, on average, not change from the beginning to the end of the interaction. Overall, these results seemed to be consistent across experimental conditions and participants' tendency to implicitly and explicitly dehumanize refugees. The only exception was the finding that in the refugee student condition, at one point, when implicit refugee dehumanization scores were increasingly positive, the verbal interaction quality ceased to become more positive over time, and in fact, became less positive over time. This effect was only present among participants who performed the conceptual categorization task. Also, the experimental conditions differed in the change over time in verbal interaction quality among participants who had lower implicit refugee dehumanization scores and performed the conceptual categorization task. Among these participants, the change in verbal interaction quality was more positive in the refugee condition than in the Canadian student condition.

Overall, these findings suggest that at the beginning of the interaction, participants who implicitly dehumanized refugees may have been more likely to experience negative affect and high levels of arousal when encountering the refugee as opposed to the Canadian student (Hebl & Dovidio, 2005). Due to a possible desire to appear unprejudiced, participants may have been motivated to monitor and control their verbal behaviour to appear in a friendly way. At the same time, they may not have been able to control their less friendly nonverbal behaviour. Interestingly, as the conversation unfolded, participants seemed to have assessed their own behaviour and the interaction in a similar way regardless of the extent to which they implicitly or explicitly dehumanized

refugees and regardless of whether they interacted with a refugee or a Canadian student. In fact, on average, participants' verbal behaviour was consistent over time and participants' nonverbal behaviour was increasingly positive over time. A reason why, on average, participants' verbal behaviour did not increase over time could be that participants already started the interaction in a very positive way leaving little room for improvement. A reason why, on average, participants' nonverbal behaviour increased over time could be that contact with their interaction partner may have reduced anxiety and/or induced a feeling of familiarity over time and bred liking (Allport, 1954; Pettigrew & Tropp, 2006; Pettigrew & Tropp, 2008; Zajonc, 1968).

Finally, the present analyses also examined whether implicit and explicit evaluation would lead to comparable effects to implicit and explicit dehumanization. Overall, the analyses covered in this section suggest that implicit and explicit evaluation neither predicted participants' nonverbal and verbal behaviour at the beginning of the interaction nor predicted change in participants' nonverbal and verbal behaviour over time. This further supports the idea that the dehumanization construct cannot just be reduced to evaluations or attitudes (Esses et al., 2008).

4.2 Specific Nonverbal Behaviours

4.2.1 Method

The analyses that were conducted to test whether implicit refugee dehumanization predicts change in specific nonverbal behaviours are based on the same thin slices that were extracted and coded to analyse Research Question 2. The only difference is that for the analyses over time, the specific behaviours are no longer averaged across T3, T4 and T5.

4.2.2 Results

Analytic Method. To examine whether participants' specific behaviours changed from the beginning to the end of interaction, I ran the same latent growth models as described before (see Table 5). To ease the readers' interpretation of the results, if not noted otherwise, the model fit of the reported models was deemed acceptable/good and will not

specifically be mentioned in the results section. A detailed description of all the models can be found in the Annex.

Latent Growth Models 1 to 3. The latent growth models 1 to 3 for participants' specific behaviours showed that the baseline measure significantly respectively marginally significantly predicted the intercept of the models (b = .191 to .745, p = .00 to .06). This means that participants' individual expressiveness or style of behaviour positively predicted their specific behaviours at the beginning of the interaction. Furthermore, while the baseline measure also significantly predicted the slope of smiling (b = -.115, p = .02) and marginally significantly predicted the slope of adapter use (b = -.093, p = .07), and frowning (b = -.110, p = .09), it did not predict the slope for the other specific behaviours (b = -.029 to .092, p = .49 to .88). These results suggest that the more participants smiled, frowned, or used adapters during the baseline interaction the more negative was their growth rate for smiling, frowning, and adapter use during the main interaction. That is, participants whose individual expressiveness was characterized by many smiles, frowns, and the use of adapters did not smile or frown more or did not use more adapters as the conversation unfolded, but smiled and frowned less and used less adapters as the conversation unfolded. The opposite was true for people whose individual expressiveness was characterized by fewer smiles, frowns and little use of adapters[30].

The results for the latent growth models 1 to 3 showed that participants' adapter use, facial rigidity as well as the extent to which participants leaned forward did not, on average, change over time (adapter use: b = -.032, p = .71; facial rigidity: b = .063, p = .31, and leaning forward; b = -.011, p = .81). Furthermore, there was no significant variation in participants' growth rates in their adapter use, facial rigidity and in the extent to which they leaned forward (adapter use: b = .212, p = 29; facial rigidity: b = .020, p = .74, and leaning forward; b = .094, p = .11). In contrast, the results showed that over time, on average, participants tended to fidget more (b = .125, p = .07). There was, however, no significant variation in participants' growth rates for the extent to which they fidgeted (b = .065, p = .41).

Finally, the results revealed that, while on average participants did not tend to significantly open or close their body posture as the conversation unfolded (b = -.016, p = .73), there was significant variation between participants' growth rates for their open/closed body posture (b = .056, p = .07). Similarly, the results showed that, while on average participants did not significantly frown more or less (b = -.030, p = .72) or significantly smiled more or less (b = -.034 and -.023, p = .71 and .70, depending on whether the correlation between the intercept and slope was estimated in the model) as time went by, there was significant respectively marginally significant variation between participants' growth rates (frown: b = .439, p = .00[31] and smile: b = .312, p = .09[32]).

Latent growth models 4 to 8. Before presenting the results of the remaining models for each specific behaviour separately, it is important to note that the intercept only models with either one of the key predictors (all models 8) revealed results that are consistent with the results based on the latent difference score analyses used to answer Research Question 2. Given that the results found in all models 8 have already been discussed in detail based on the latent difference score analyses, I will now only focus on any additional findings from the remaining latent growth models.

For **fidgeting**, an additional finding was a main effect of type of interaction partner on the slope of fidgeting (models 4 and 5 across predictors: b = -.252 to -.498, p = .01 to .08). That is, the slope of fidgeting was smaller for participants in the refugee condition than for participants in the Canadian student condition. That is, in the refugee condition the predicted average slope was slightly negative (mean slope = -.055), whereas in the Canadian student the predicted average slope was positive (mean slope = .268)[33].

Also, model 5 revealed a marginally significant interaction effect between type of interaction partner and implicit refugee evaluation on the slope of fidgeting (b = .005, p = .08).[34] The simple slope analysis showed that there was a positive marginally significant relationship between implicit refugee evaluation and the slope of fidgeting in the refugee student condition (b = .005, p = .07), but not in the Canadian student condition (b = -.001, p = .65). Also, among participants with low scores for implicit refugee evaluation there was a difference in the slope of fidgeting depending on the

experimental condition. When these participants talked to the Canadian student their fidgety behaviour increased slightly over time. However, when these participants talked to the refugee they tended to fidget less as time went by. However, this difference disappeared as participants' implicit refugee evaluation scores increased (see Figure 30).

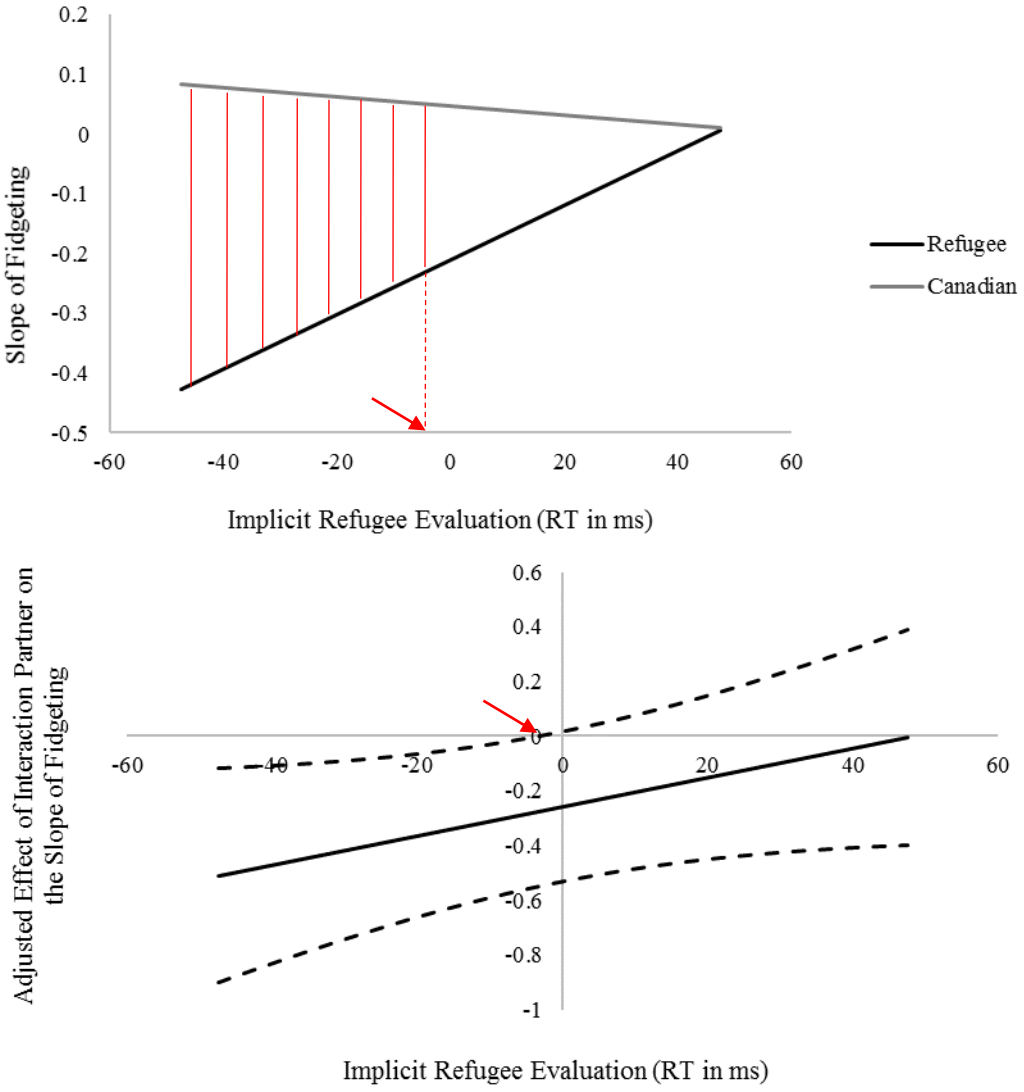


Figure 30. Top: Interaction between type of interaction partner and implicit refugee evaluation on the slope of fidgeting. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the slope for fidgeting between the refugee and Canadian condition adjusted for participants' implicit refugee evaluation scores (dashed lines represent 95% confidence intervals).

There was also a marginally significant interaction between type of interaction partner and explicit evaluation of refugees on the intercept of fidgeting (models 4 and 5: b = .021, p = .09). However, this effect only appeared in two of the five latent growth models. All these models had poor model fits and will therefore not be further interpreted (X^2(6 to 12) = 16.025 to 26.918, p = .01 and .02; CFIs = .901 to .938, RMSEAs = .120 to .145, RMSEA 90% CI = .061-.289 to .061-.234). Also, the latent difference score model for fidgeting with explicit evaluation of refugees as the main predictor, which had a good fit (X^2(3) = .922, p = .82, CFI = 1.000, RMSEA = .000, RMSEA 90% CI = .000-.114), did not find any interaction effect (b = .017, p = .15).

For **smiling**, an additional finding was a marginally significant interaction effect between type of interaction partner and implicit Canadian evaluation on the intercept of smiling (models 4 to 6: b = .007 to .010, p = .06 to .09).[35] The simple slope analysis showed that, at the beginning of the interaction, there was a marginally significant relationship between implicit Canadian evaluation and the intercept of smiling in the Canadian student condition (b = -.005, p = .09), but not in the refugee student condition (b = .004, p = .39). Also, at the beginning of the interaction, participants with low implicit Canadian evaluation scores were less likely to smile in the refugee condition than in the Canadian student condition (see Figure 31).

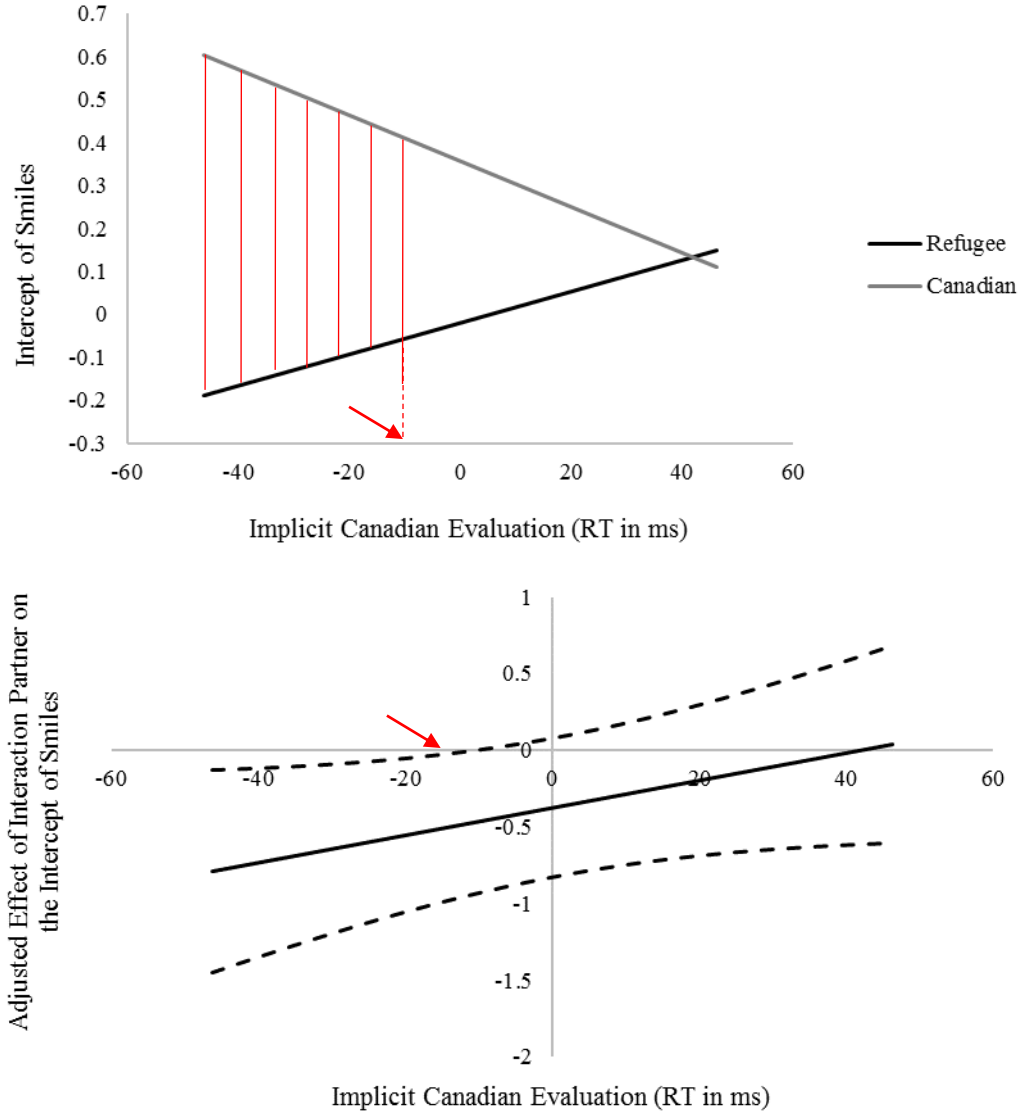


Figure 31. Top: Interaction between type of interaction partner and implicit Canadian evaluation on the intercept of smiling. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the intercept of smiling between the refugee and Canadian condition adjusted for participants' implicit Canadian evaluation scores (dashed lines represent 95% confidence intervals).

For **closed body posture**, the only additional finding was a marginally significant interaction effect between type of interaction partner and explicit evaluation of refugees on the intercept (model 8: b = .012, p = .08). While the simple slopes were not significant (refugee: b = .007, p = .23, Canadian: b = -.005, p = .20), there was a

difference in closed body posture at the beginning of the interaction between experimental conditions for participants with a more positive evaluation of refugees. Among these participants, participants' body posture was more likely to be closed when interacting with the refugee than when interacting with the Canadian student (see Figure 32). However, this effect was not significant or marginally significant in the latent growth models that included the slope and was also not significant or marginally significant in the latent difference score model. That is, this interaction effect should be interpreted with caution.

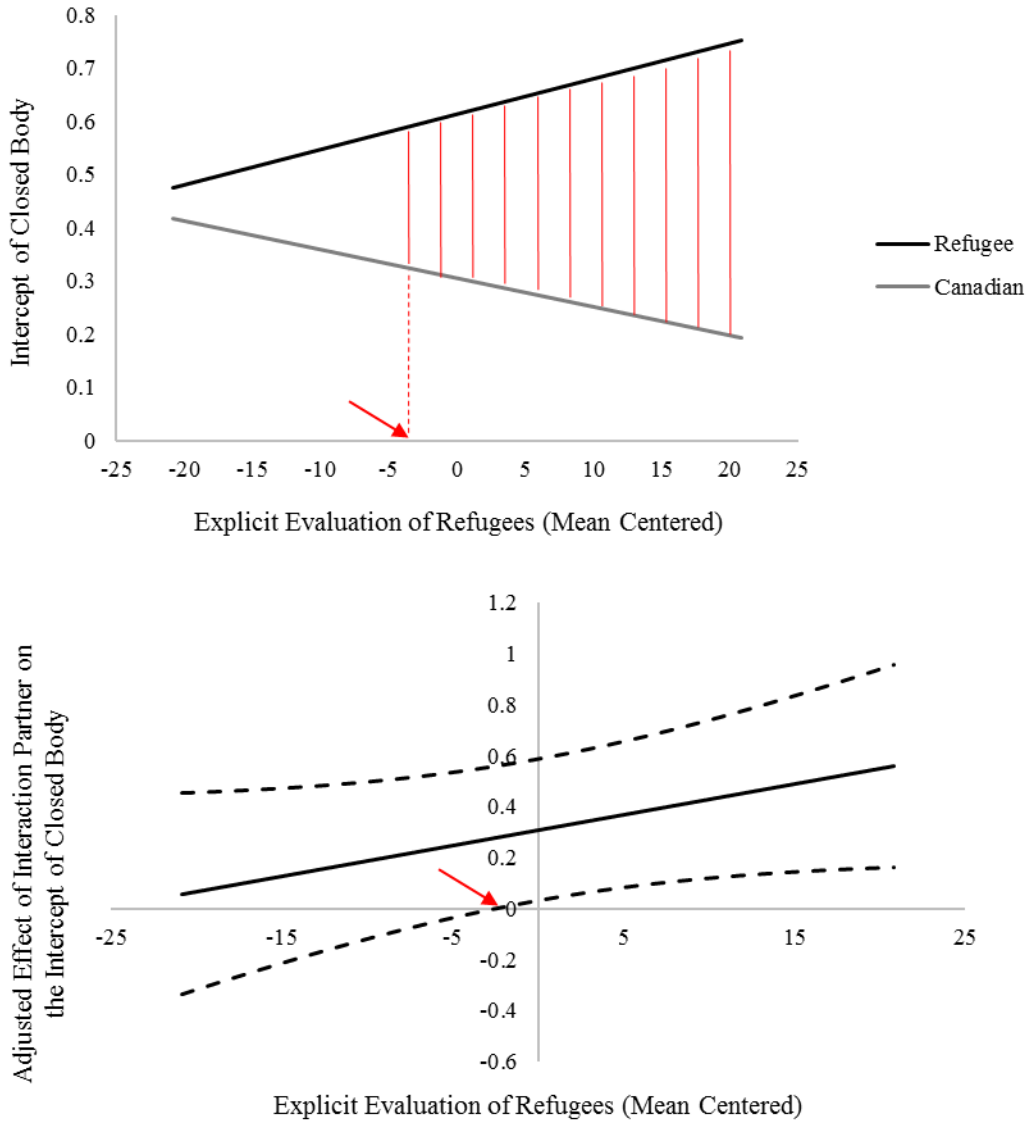


Figure 32. Top: Interaction between type of interaction partner and explicit evaluation of refugees on the intercept of closed body posture with highlighted area indicating significant differences between the regression lines. Bottom: Difference in the intercept for closed body posture between the refugee and Canadian condition adjusted for participants' explicit evaluation of refugees (dashed lines represent 95% confidence intervals).

For **frowning**, an additional finding was a significant respectively marginally significant interaction between type of interaction partner and explicit evaluation of refugees on the intercept and the slope of frowning (models 4 and 5, intercept: b = -.023

and -.025, p = .02 and .01; and slope: b = .014 and .015, p = .07 and .05). In the other three latent growth models, the interaction between type of interaction partner and explicit evaluation of refugees on the intercept was not or only marginally significant (models 6 to 8: b = -.011 to -.114, p = .07 to .13). All latent growth models had either a poor or mediocre model fit (X^2(6 to 12) = 12.172 to 28.241, p = .00 to .06, CFIs = .830 to .936, RMSEAs = .102 to .152, RMSEA 90% CIs = .000-.179 to .076-.233). Finally, the latent difference score analysis, which had the best model fit (X^2(3) = 1.542, p = 67, CFI = 1.000, RMSEA = .000, RMSEA 90% CI = .000-.146), did not find any significant interaction (b = -.013, p = .11). Therefore, the interaction effect is not further discussed.

For **adapter use**, only models 4, in which both the intercept and the slope are regressed on one of the key predictors, produced additional findings. In particular, model 4 showed a marginally significant 3-way interaction between type of interaction partner, type of categorization task and implicit refugee dehumanization (b = -.025, p = .07). The simple slopes analyses for participants who performed the evaluative categorization task showed the same pattern as the 2-way interaction effect between type of interaction partner and implicit refugee dehumanization found in the latent difference score analysis used to answer Research Question 2. In particular, the simple slopes showed that in the refugee condition there was a significant positive relationship between implicit refugee dehumanization and adapter use (b = .012, p = .04), and in the Canadian student condition there was a significant negative relationship between implicit refugee dehumanization and adapter use (b = -.012, p = .03). Furthermore, among participants with low implicit refugee dehumanization scores there was a significant difference between experimental conditions for adapter use. Participants in the refugee condition used significantly fewer adapters than participants in the Canadian student condition (see Figure 33). The simple slope analyses for participants who performed the conceptual categorization task followed a different pattern. In particular, in both the refugee and the Canadian student condition there was a positive relationship between implicit refugee dehumanization and adapter use (refugee: b = .017, p = .02; and Canadian: b = .017, p = .05, see Figure 34).[36]

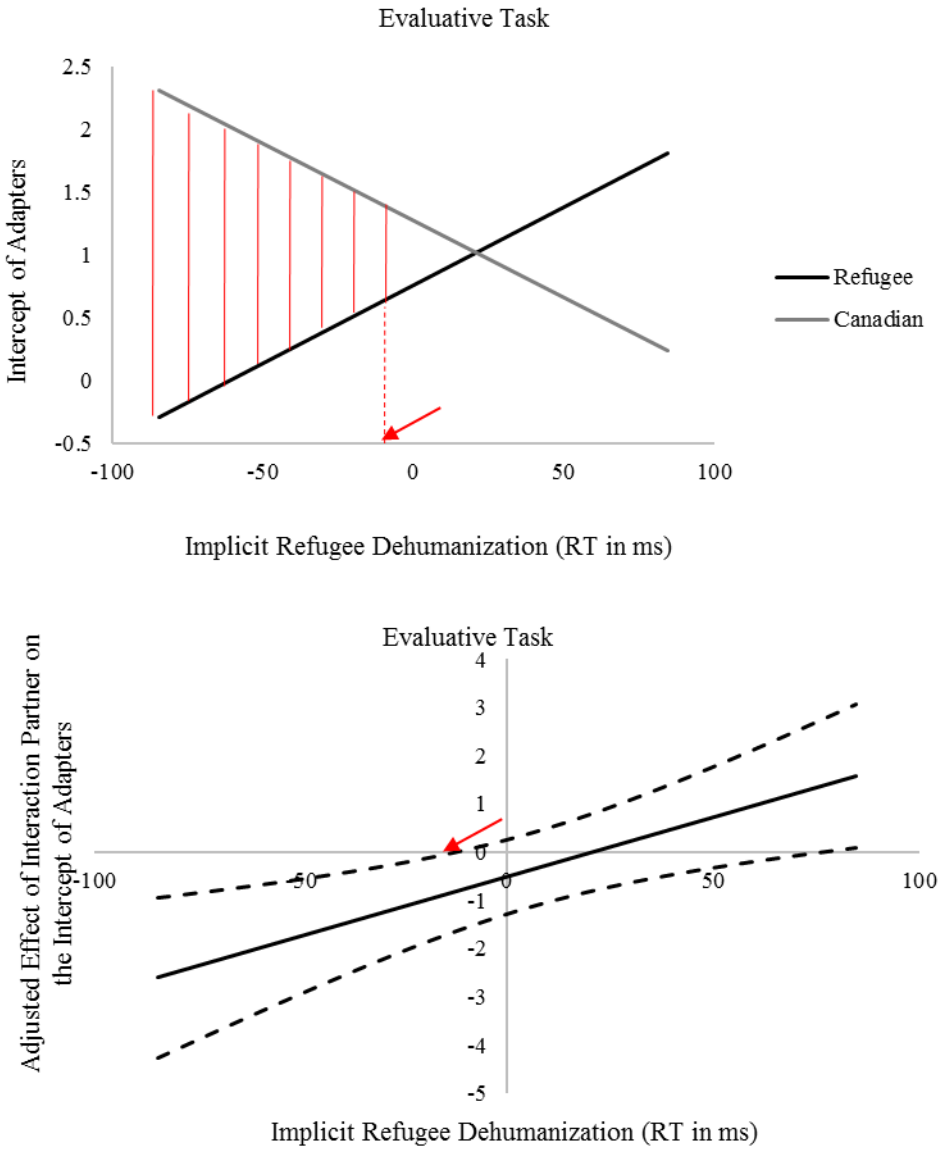


Figure 33. Top: Simple slopes for 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on the intercept of adapter use (illustrated are the simple slopes for the evaluative categorization task). The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the intercept for adapter use between the refugee and Canadian condition adjusted for participants' implicit refugee dehumanization scores (dashed lines represent 95% confidence intervals).

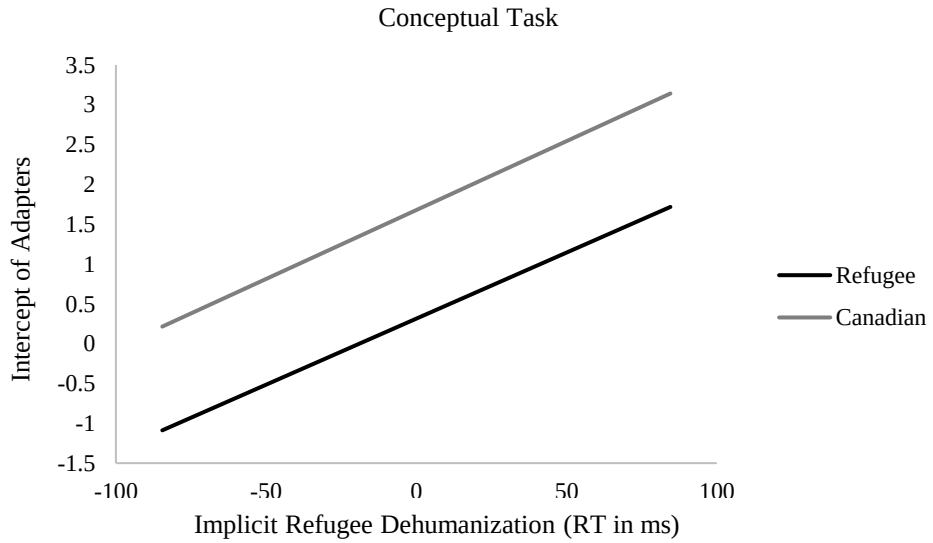


Figure 34. Top: Simple slopes for 3-way interaction between type of interaction partner, implicit refugee dehumanization and type of categorization task on the intercept of adapter use (illustrated are the simple slopes for the conceptual categorization task).

Furthermore, model 4 also revealed a marginally significant interaction effect between type of interaction partner and implicit refugee evaluation on the intercept of adapter use (b = -.013, p = .07). While none of the simple slopes was significant (refugee: b = -.009, p = .13; and Canadian: b = .004, p = .31), there was significant difference between experimental conditions among participants with more negative implicit refugee evaluations scores. In particular, at the beginning of the interaction, participants with increasingly negative implicit refugee evaluation scores used fewer adapters in the refugee condition than in the Canadian student condition (see Figure 35).

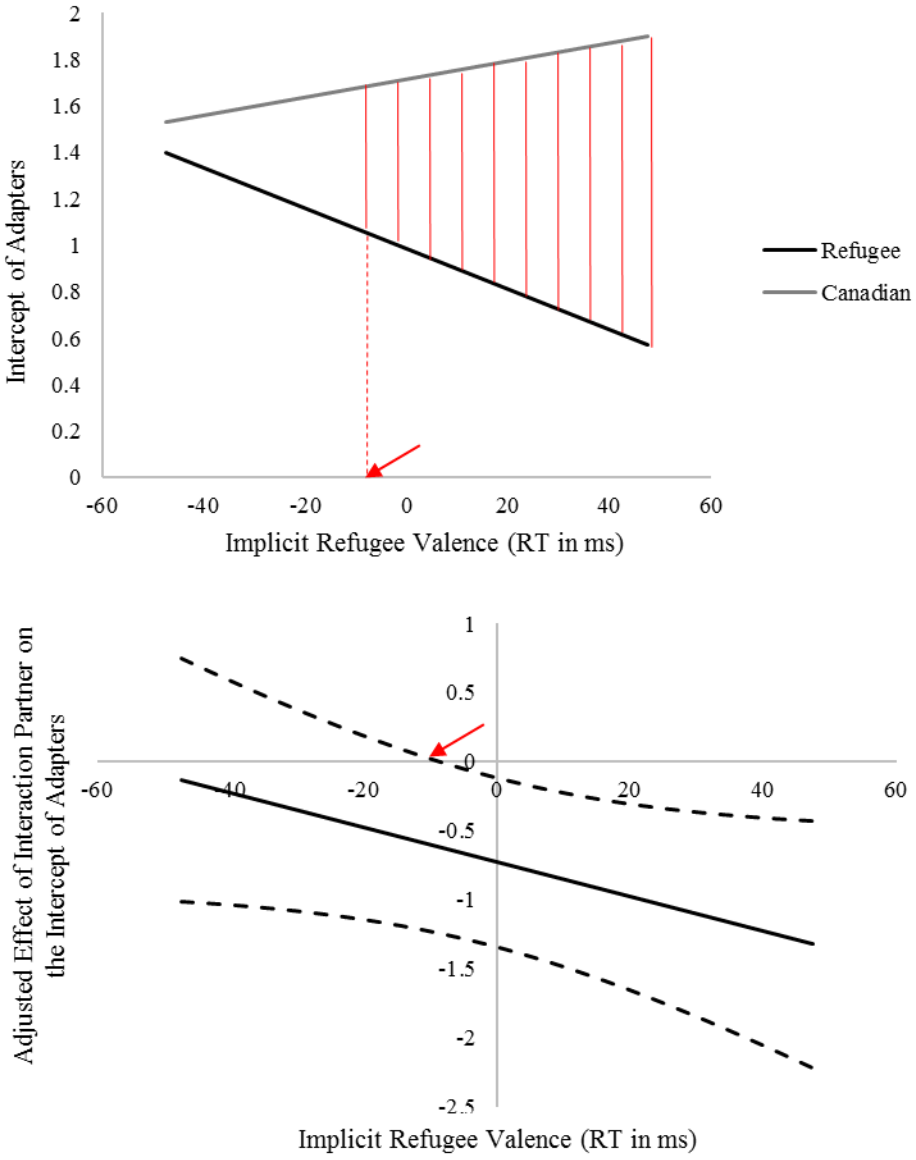


Figure 35. Top: Interaction between type of interaction partner and implicit refugee evaluation on the intercept of adapter use. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the intercept for adapter use between the refugee and Canadian condition adjusted for participants' implicit refugee evaluation scores (dashed lines represent 95% confidence intervals).

Finally, model 4 also revealed a significant interaction between type of interaction partner and explicit evaluation of refugees on the intercept of adapters (b = .030, p = .04). The simple slope analysis showed that there was a marginally significant negative

relationship between explicit evaluation of refugees and adapter use at the beginning of the interaction only in the Canadian student condition (b = -.016, p = .07), but not in the refugee student condition (b = .014, p = .25; see Figure 36).

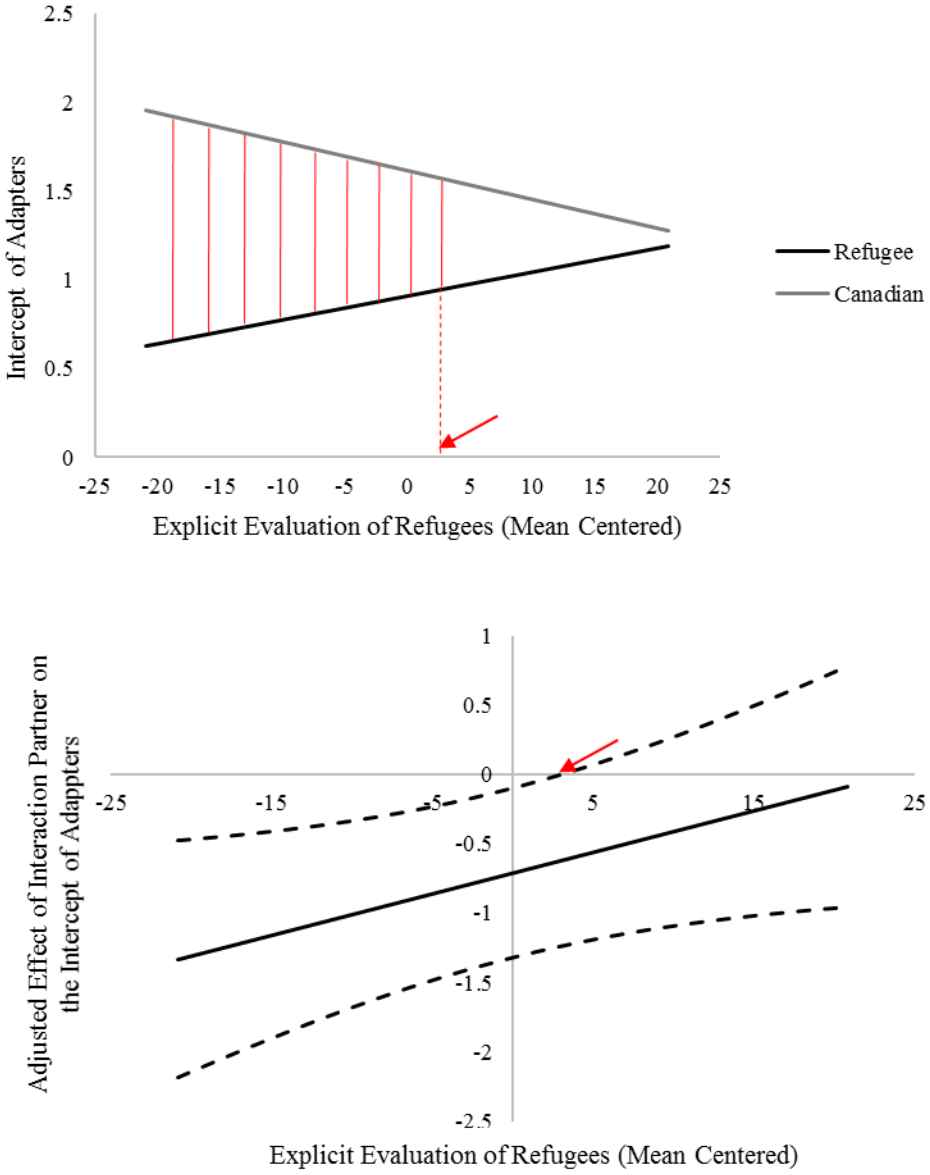


Figure 36. Top: Interaction between type of interaction partner and explicit evaluation of refugees on the intercept of adapter use. The highlighted area indicates significant differences between the regression lines. Bottom: Difference in the intercept for adapter use between the refugee and Canadian condition adjusted for participants' and explicit evaluation of refugees (dashed lines represent 95% confidence intervals).

Finally, the results for **facial rigidity** and **leaning forward** did not produce any significant additional findings.[37]

4.2.3 Discussion

The analyses in this section aimed at examining whether participants' display of specific nonverbal behaviours changed as the interaction unfolded as well as to examine whether implicit and explicit refugee dehumanization predicted any change. While there were no clear-cut expectations regarding participants' change in specific behaviours, it was expected that in the beginning of the interaction participants who implicitly dehumanized refugees would be more likely to display specific behaviours that are indicative of anxiety or uneasiness. It was also expected that explicit refugee dehumanization would not predict participants' display of specific behaviours at the beginning of the interaction and that it would not predict any change in these specific behaviours.

Overall, the analyses in this section showed that over time participants tended to, on average, fidget more, which is typically a sign of uneasiness (Trawalter, 2006). Furthermore, participants' facial rigidity as well as the extent to which participants, on average, used adapters, leaned forward, smiled, frowned, closed their body postures did not change over time. Finally, the analyses in this section showed that participants individual change rates varied over time for closed body posture, frowning and smiling, but not for adapter use, facial rigidity and leaning forward.

When it came to predicting the display of specific behaviours at the beginning of the interaction, the results covered in this section mirrored those covered under research question 2. That is, implicit refugee dehumanization and type of interaction partner significantly predicted the extent to which participants had rigid faces, smiled and used adapters at the beginning of the interaction. However, implicit refugee dehumanization and type of interaction partner did not predict the extent to which participants had closed body postures, leaned forward or fidgeted at the beginning of the interaction. Finally, as expected, explicit refugee dehumanization did not predict any of the specific behaviours at the beginning of the interaction.

When it came to predicting any change in participants' display of specific behaviours over time, implicit refugee dehumanization and type of interaction partner did not play a role. This is, however, not totally unexpected given that there was no significant variation in participants' change rates for adapter use, leaning forward, and facial rigidity. Nevertheless, as mentioned before, there was significant variation is participants' change rates for smiling, frowning and closed body posture, which was not predicted by implicit refugee dehumanization and the type of interaction partner. Surprisingly, the only finding concerning change over time was related to participants' fidgety behaviour and their implicit refugee evaluation scores. Participants who tended to associate refugees with positivity showed a slight increase in fidgety behaviour over time when talking to the Canadian student. However, participants who tended to associate refugees with positivity showed a decrease in fidgety behaviour over time when talking to the refugee.

Besides these findings, the analyses covered in this section also produced some additional significant effects. However, these effects could often not really be interpreted due to poor model fit. An exception was the finding that implicit Canadian evaluation and type of interaction partner influenced the extent to which participants smiled at the beginning of the interaction. In particular, at the beginning of the interaction, participants with low implicit Canadian evaluation scores were more likely to smile in the Canadian student condition than in the refugee condition. Finally, a series of additional findings emerged for participants' adapter use at the beginning of the interaction. In particular, depending on participants' implicit and explicit refugee evaluation scores and their type of interaction partner, participants seemed to have used more or less adapters. However, these findings should be interpreted with caution because of the following reasons. First, these findings only appeared in the models in which the slope was included and predicted by implicit or explicit refugee evaluation and type of interaction partner. That is, these effects did not appear across all models. Second, given that participants' adapter use did not, on average, change over time and given that there was no significant variation in participants' change rates for adapter use, the usefulness of a latent growth model, despite its good model fit, must be questioned.

Chapter 5

5 General Discussion

The goal of the present research was to examine the behavioural consequences of implicit and explicit dehumanization of refugees. In particular, the present research focused on the following main research question: Do implicit and explicit dehumanization of refugees predict nonverbal and verbal behaviour toward refugees? The present research also investigated two subsidiary research questions. First, do implicit and explicit refugee dehumanization predict specific nonverbal behaviours that are indicative of anxiety or general uneasiness, such as self-touch and fidgeting (Ekman & Friesen, 1972), as well as specific nonverbal behaviours that are indicative of happiness and/or comfort (e.g., smiles, gestures; Ekman & Friesen, 1972; Ekman et al., 1972; Izard, 1971)? Second, do implicit and explicit dehumanization of refugees predict how nonverbal and verbal behaviour (based on adjective ratings) as well as specific nonverbal behaviours change over time during a social interaction with a refugee?

Based on past research (DePaulo & Friedman, 1998; Dovidio et al., 2006; Hebl & Dovidio, 2005; Strack & Deutsch, 2004) it was expected that implicit refugee dehumanization would negatively predict positive nonverbal behaviour and that explicit refugee dehumanization would negatively predict positive verbal behaviour. Furthermore, it was expected that implicit refugee dehumanization would positively predict specific behaviours that are indicative of anxiety or general uneasiness, such as adapter use and fidgeting (Ekman & Friesen, 1972; Trawalter, 2006). Finally, the present research expected that depending on participants' assessment of their interaction partner and their interaction, participants would either reinforce or change their behaviour toward their interaction partner.

5.1 Summary of Findings

Participants who performed the conceptual categorization task were more likely to implicitly associate refugees with the animal concept than the human concept when compared to Canadians. Furthermore, on an explicit level, on average participants

perceived refugees as engaging in enemy and barbaric acts, an explicit measure of dehumanization, which is consistent with previous research (Esses et al., 2008; Medianu et al., 2016).

To examine the behavioural consequences of implicit and explicit refugee dehumanization during a social interaction, participants' behaviour was coded at the beginning, middle and end of the interaction using either adjective ratings, which focused on the positivity of their nonverbal behaviour and the positivity of their interaction, or using a coding scheme for specific nonverbal behaviours.

5.1.1 Adjective Ratings

The results for the coding based on adjective ratings showed that, across the three time points, participants with higher implicit dehumanization scores showed less positive nonverbal behaviour toward a refugee than a Canadian student. Furthermore, participants with higher implicit dehumanization scores did not differ in their verbal behaviour toward a refugee compared to the Canadian student. That is, participants' tendency to implicitly associate refugees with the animal concept as opposed to the human concept found its expression only in their nonverbal behaviour but not in their verbal behaviour. This suggests that implicit refugee dehumanization is more likely to be reflected in behaviours that are not easily controlled.

As expected, explicit refugee dehumanization did not predict nonverbal behaviour toward a refugee. Furthermore, there was mixed evidence regarding the effect of explicit refugee dehumanization on verbal behaviour toward a refugee. On the one hand, there was evidence that explicit refugee dehumanization might be associated with less positive verbal behaviour. In particular, the quality of the interaction based on participants' verbal behaviour tended to be rated lower for the refugee interaction than the Canadian interaction for participants who explicitly dehumanized refugees. On the other hand, explicit refugee dehumanization did not predict participants' verbal behaviour during the interaction.

5.1.2 Specific Nonverbal Behaviours

The results based on the coding of specific nonverbal behaviours were only partially consistent with the above-mentioned results based on the adjective ratings. On one hand, the results showed that implicit refugee dehumanization and type of interaction partner did not predict participants' body posture, their fidgety behaviour, and the extent to which they leaned forward. On the other hand, the results showed that implicit refugee dehumanization and type of interaction partner predicted participants' facial rigidity and the extent to which they smiled and frowned. In particular, among participants who performed the evaluative task, there was a significant difference in participants' facial rigidity between experimental conditions for participants with very low and very high implicit refugee dehumanization scores. That is, participants with lower implicit refugee dehumanization scores had less rigid faces in the refugee condition than in the Canadian student condition, whereas participants with very high implicit refugee dehumanization scores had more rigid faces in the refugee student condition than in the Canadian student condition. Furthermore, the results showed that participants with high implicit refugee dehumanization scores were less likely to smile and more likely to frown in the refugee condition than in the Canadian student condition. Finally, among participants with low implicit refugee dehumanization, there was a significant difference between experimental conditions for adapter use. Participants in the refugee condition used significantly less adapters than participants in the Canadian student condition. However, the same effect appeared for participants with low implicit Canadian dehumanization scores.

5.1.3 Analyses over Time

When the adjective ratings for participants' behaviour were analyzed for each time point separately, the results showed that at the beginning of the interaction, participants with higher implicit refugee dehumanization scores showed less positive nonverbal behaviour toward a refugee than a Canadian student. Furthermore, at the beginning of the interaction, participants with higher implicit refugee dehumanization scores did not differ in their verbal behaviour toward a refugee compared to the Canadian student. Finally, consistent with the results that looked at the average across the three time points, at the beginning of the interaction there was mixed evidence regarding the effect of explicit

refugee dehumanization on verbal behaviour toward a refugee. On the one hand, the results showed that the quality of the interaction based on participants' verbal behaviour tended to be lower for the refugee interaction than the Canadian interaction for participants who explicitly dehumanized refugees. On the other hand, explicit refugee dehumanization did not predict participants' verbal behaviour during the interaction.

As the interaction unfolded, participants' nonverbal behaviour became, on average, more positive. However, participants' verbal behaviour did not change, on average, from the beginning to the end of the interaction. Overall, these results seemed to be consistent across experimental conditions and participants' tendency to implicitly and explicitly dehumanize refugees. The only exception was the finding that in the refugee student condition, at one point, when implicit refugee dehumanization scores were increasingly positive, the verbal interaction quality ceased to become more positive over time, and in fact, became less positive over time. This effect was only present among participants who performed the conceptual categorization task. Also, the experimental conditions differed how the verbal interaction quality changed over time among participants who had lower implicit refugee dehumanization scores and performed the conceptual categorization task. Among these participants, the change in verbal interaction quality was more positive in the refugee condition than in the Canadian student condition.

When the display of participants' specific nonverbal behaviours was analyzed for each time point separately, the results at the beginning of the interaction mirrored those obtained based on the averages across the three time points. That is, implicit refugee dehumanization and type of interaction partner significantly predicted the extent to which participants had rigid faces, smiled, frowned and used adapters at the beginning of the interaction. However, implicit refugee dehumanization and type of interaction partner did not predict the extent to which participants had closed body postures, leaned forward or fidgeted at the beginning of the interaction. Finally, as expected, explicit refugee dehumanization did not predict any of the specific behaviours at the beginning of the interaction.

When it came to predicting any change in participants' display of specific behaviours over time, implicit refugee dehumanization and type of interaction partner did not play a role. This is, however, not totally unexpected given that there was no significant variation in participants' change rates for adapter use, leaning forward, and facial rigidity. Nevertheless, there was significant variation in participants' change rates for smiling, frowning and closed body posture, which was not explained by implicit refugee dehumanization and the type of interaction partner. Surprisingly, the only finding concerning change over time was related to participants' fidgety behaviour and their implicit refugee evaluation scores. Participants who tended to associate refugees with positivity showed a slight increase in fidgety behaviour over time when talking to the Canadian student. However, participants who tended to associate refugees with positivity showed a decrease in fidgety behaviour over time when talking to the refugee.

One question that arises is why the results based on coding participants' nonverbal behaviour with adjective ratings and the results based on coding participants' specific nonverbal behaviour did not produce a more consistent picture. One may speculate that the coders' judgment of participants' specific nonverbal behaviours was less accurate given the detailed instructions that they received as opposed to providing intuitive judgments (Ambady, 2010). In particular, Ambady (2010) found that intuitive judgments were more accurate than judgments that required participants to provide justifications for their judgments. However, this explanation is unlikely due to several reasons. First, inter-rater reliability ranged from being acceptable to very good for most specific nonverbal behaviours. If the provision of detailed instructions had been an issue, one would have expected lower levels of agreement between coders due to the lower accuracy in their ratings. Second, the instructions used in this study to code for specific nonverbal behaviours were successfully used in previous research (Trawalter, 2006).

Furthermore, one may possibly argue that another reason for the inconsistent results for the coding based on adjective ratings and the coding based on specific nonverbal behaviours, might be related to the validity of the thin-slice method for assessing specific nonverbal behaviours. Previous research has shown that specific nonverbal behaviours that are more likely to be situationally dependent (e.g., gestures or

self-touch as opposed to smiles) have a lower slice-whole validity (how well a particular slice captures the whole interaction for a given behavior; Murphy et al., 2015). Nevertheless, Murphy et al. (2015) also found that these behaviours could be validly assessed with slightly longer thin slices (thin slices ranging between 1 and 2 minutes). This suggests that, while the thin slice length of a total of 30 seconds (as used in this study) may have been sufficient for certain specific nonverbal behaviours, it may have not been long enough for other specific nonverbal behaviours that are more situationally dependent.

Moreover, another issue relevant to the inconsistency in findings between the coding based on adjective ratings and the coding based on specific nonverbal behaviours is the issue of power. The sample size for the present research was not based on a priori power analyses. As a consequence, it is not clear whether the lack of findings for the specific nonverbal behaviours could be due to insufficient power to detect subtle differences in specific nonverbal behaviours. Given that post-hoc power analyses have been criticized regarding their meaning (Lakens, 2014), future research on specific nonverbal behaviours is advised to perform a priori power analyses.

Finally, another reason for the inconsistent results for the coding based on adjective ratings and the coding based on specific nonverbal behaviours might be related to the construct validity of these specific nonverbal behaviours. While research suggests that specific nonverbal behaviours such as eye contact, leaning forward, nodding or smiling are signs of attraction, comfort and respect (Dovidio et al., 1997; Godfrey et al., 1986; Kleinke, 1986), it must be noted that specific nonverbal behaviours can convey, besides emotions and attitudes, also other information such as ‘moods, values, personality dispositions, psychopathologies, physical states such as fatigue, and cognitive states such as comprehension or befuddlement’ (p. 205, DePaulo, 1992). Similarly, Ekman and Friesen (1967) noted that sometimes body positions might be misinterpreted (e.g., a slouched position due to apathy may be misread as relaxation). This is important for two reasons. First, it suggests that specific nonverbal behaviours may not always be easily linked to a specific emotional state. Second, following the view of Gestalt psychologists, it suggests that, at least in this study, the whole could have been more than the sum of its

elements. That is, by disentangling nonverbal behaviours into specific behaviours, important information may have been lost. This may also be one of the reasons why no underlying factors could be found for all the specific nonverbal behaviours. In contrast, when coders intuitively judged participants' nonverbal behaviour with adjective ratings they most likely focused on the whole instead of specific elements (Peterson & Rhodes, 2006).

5.1.4 Dehumanization versus Evaluation

The present research also examined whether implicit and explicit refugee evaluation led to the same effects as implicit and explicit refugee dehumanization. On an explicit level, participants reported on average neither very favourable nor very unfavourable attitudes toward refugees. On an implicit level, participants tended to associate more negative than positive evaluation to refugees when compared to Canadians. The results based on the adjective ratings showed that overall participants' implicit and explicit evaluation of refugees did not predict participants' nonverbal and verbal behaviour toward a refugee or Canadian across the three time points or when the three time points were analyzed separately.

The results based on participants' display of specific nonverbal behaviours found a few effects of implicit evaluation of refugees, implicit evaluation of Canadians and the type of interaction partner. In particular, when the specific behaviours were analysed across the three time points, implicit refugee evaluation predicted closed body posture in the refugee condition, but not in the Canadian condition. That is, in the refugee condition, higher implicit refugee evaluation scores were associated with a more open body posture. Furthermore, across all three time points, participants with lower implicit refugee evaluation scores were more likely to have a closed body posture when interacting with the refugee than when interacting with the Canadian student. Moreover, participants with high implicit Canadian evaluation scores were more likely to lean forward in the Canadian student condition than in the refugee condition. While no specific predictions were made regarding the effect of implicit refugee evaluation and implicit Canadian evaluation on behaviour, the direction of these findings seems counterintuitive. Based on past research investigating the relationship between implicit prejudice and nonverbal

behaviour (e.g., Dovidio et al., 2002; Hofman, Gschwender, Castelli, & Schmitt, 2008; McConnell & Leibold, 2001), one would assume that the more participants implicitly associate refugees with negativity the more closed their body posture would be toward a refugee and that the more participants associate Canadians with negativity the less likely they would be to lean forward in an interaction with a Canadian. However, exactly the opposite was true. At this point, it is unclear why these findings emerged. Future research may be advised to further investigate this issue. Future research may also consider examining whether implicit evaluation scores derived from Medianu's (2010) sequential priming procedure lead to similar effects as implicit measures typically used to study implicit prejudice (e.g., Implicit Association Test, Greenwald et al., 1998).

Finally, when the three time points were analysed separately, the present research also found that implicit Canadian evaluation and type of interaction partner predicted the extent to which participants smiled at the beginning of the interaction. In particular, at the beginning of the interaction, participants with low implicit Canadian evaluation scores were more likely to smile in the Canadian student condition than in the refugee condition. That is, at the beginning of the interaction, the more participants associated Canadians with positivity the more likely they were to smile in the Canadian student condition as opposed to the refugee condition. Again, while no specific predictions were made regarding the effect of implicit refugee evaluation and implicit Canadian evaluation, the direction of this effect seems plausible given the vast literature on in-group favouritism (e.g., Brewer, 1999; Turner, Brown, & Tajfel, 1979).

Overall, the main reason why implicit refugee evaluation and implicit Canadian evaluation were included as predictors in this research was to show that implicit refugee dehumanization and implicit Canadian dehumanization cannot be reduced to evaluations or attitudes (Esses et al., 2008). In support of this view, the findings of this study showed that implicit evaluation and implicit dehumanization produced a different pattern of results.

5.2 Theoretical and Practical Implications

The present research supports the reflective-impulsive model of social behaviour (Strack & Deutsch, 2004). The model argues that there are two systems – the reflective and the implulsive system – that jointly explain behaviour. In the reflective system, behavioural schemata are deliberately activated through an intention. In the impulsive system, behavioural schemtata are activated automatically through spreading activation. Importantly, by differentiating between these two systems, the model is able to explain how spontaneous and deliberate behaviours are formed. That is, the model is able to explain nonverbal and verbal behaviours typically displayed in any social interaction. Finally, the reflective-impulsive model of social behaviour also assumes that implicit measures tend to tap into the impulsive system and therefore are more likely to explain spontaneous behaviours. The model also assumes that explicit measures are more likely to tap into the reflective system and therefore are more likely to explain deliberate behaviours. Consistent with this view, the present research found that overall implicit refugee dehumanization predicted participants' nonverbal behaviour (based on adjective ratings) and did not predict participants' verbal behaviour. Furthermore, the present research also found partial support for the predictive effect of explicit refugee dehumanization on participants' verbal behaviour.

The present research also supports Hebl and Dovidio's (2005) Model of Mixed Social Interactions. The model describes a mixed social interaction – a social interaction between a stigmatizer and a target – as a dynamic process. During this dynamic process several variables influence how both parties behave and how they perceive the whole interaction. For example, at the beginning of the interaction the stigmatizer's motivations, goals and, eventually, nonverbal and verbal behaviours are largely dependent on their personal characteristics, past experiences with the target or people similar to the target, the type of relationship between stigmatizer and the target and any situational influences. The present research focused on one of these variables. In particular, the present research focused on how personal characteristics, such as an individual's propensity to implicitly dehumanize refugees, influence the stigmatizer's behaviour. Consistent with the Model of Mixed Social Interactions, at the beginning of the interaction, participants' tendency to

implicitly dehumanize refugees predicted the positivity of their nonverbal behaviours. Participants who implicitly dehumanized refugees may have been more likely to experience negative affect and high levels of arousal when encountering the refugee as opposed to the Canadian student. Furthermore, due to a possible desire to appear unprejudiced, participants may have been motivated to monitor and control their verbal behaviour to appear in a friendly way. At the same time, they may not have been able to control their less friendly nonverbal behaviour.

The Model of Mixed Social Interactions (Hebl & Dovidio, 2005) also assumes that as the interaction between the stigmatizer and the target unfolds, both parties assess their interaction partner as well as the quality of the interaction. These assessments may then in turn result in a potential revision, creation or reinforcement of implicit and explicit attitudes regarding their partner or the group that the partner belongs to. Furthermore, these assessments may in turn affect both parties' behaviour. While the present research did not assess what participants thought while they were interacting with their partner, or whether there was any change in their implicit or explicit refugee dehumanization scores after the interaction, it attempted to examine whether participants' behaviour changed over time. Interestingly, as the conversation unfolded, participants seemed to have assessed their own behaviour and the interaction in a similar way regardless of the extent to which they implicitly or explicitly dehumanized refugees and regardless of whether they interacted with a refugee or a Canadian student. In fact, on average, participants' verbal behaviour as well as their specific nonverbal behaviours (with exception of their fidgety behaviour) were consistent over time. Only, participants' nonverbal behaviour (assessed through adjective ratings) was increasingly positive over time. A reason why, on average, participants' nonverbal behaviour became more positive over time could be that contact with their interaction partner may have reduced anxiety and/or induced a feeling of familiarity over time and bred liking (Allport, 1954; Pettigrew & Tropp, 2006; Pettigrew & Tropp, 2008; Zajonc, 1968).

The present research extends past research on dehumanization in three ways. First, in contrast to most previous research (e.g., Costello & Hodson, 2011; Rudman & Mescher, 2012; Viki et al., 2013), the present research focuses on actual behaviour

instead of behavioural intentions. Second, while most past research on the behavioural consequences of dehumanization either focused on prosocial or antisocial behaviour (e.g., Cuddy et al., 2007; Vaes et al., 2003; Kteily et al., 2015), the present research studied behaviour in a social interaction. Finally, the present research is, to the author's knowledge, the first study to demonstrate the behavioural consquences of a *subtle* form of dehumanization. In particular, to date, no other research has shown that implicit refugee dehumanization predicts the positivity of a person's nonverbal behaviour during a social interaction.

The results of the present research are important given that past research has shown that news stories portraying refugees as bogus or terrorists are likely to influence the extent to which people implicitly dehumanize refugees compared to Canadians (Medianu et al., 2016). Given that the current refugee crisis is one of the major issues in the 21st century and given that it has received considerable media attention, it is important to know that implicit dehumanization can have behavioural consequences. Furthermore, past research also suggests that in social interactions people are able to perceive their partners' nonverbal behaviours, which in turn can affect their own nonverbal behaviour (Chartrand, Maddux, & Lakin, 2005) as well their perceptions of their interaction partners (Dovidio et al., 2002). This has practical implications for people in direct contact with refugees. If these people tend to implicitly dehumanize refugees, they are more likely to show less positive nonverbal behaviours, which in turn may affect the refugees' behaviour and their perceptions, and thus possibly lead to less positive interactions.

While the findings of the present research focus mostly on the subtle end of the blatancy continuum of dehumanization (Haslam, 2014), it is important to note that as the blatancy of dehumanization varies so may the quality of behavioural responses to dehumanization. This is especially noteworthy given that recently Europe and the United States have been witnessing an increase in right-wing populism and associated with this trend, an increase in blatant dehumanization of others (e.g., refugees and other minority groups, such as Muslims or Mexican immigrants). This is concerning not only because, as a wide set of studies have shown, dehumanization is related to antisocial behaviour, but also because minority groups who perceive that they are blatantly dehumanized have

been found to suffer from negative emotional and cognitive reactions (Bastian & Haslam, 2011) and have been found to be more supportive of aggressive reactions (Kteily & Bruneau, 2016). In particular, Kteily and Bruneau (2016) found that Mexican immigrants and Muslims in the U.S. who felt dehumanized during the 2016 U.S. Republican Primaries were more likely to report emotional hostility, to support violent collective action and to be less willing to assist counterterrorism efforts. Overall, this suggests that dehumanization of others could potentially lead to a vicious cycle where the dehumanization of others and its behavioural consequences are perceived by those who are dehumanized, and they, in turn, may then show negative emotional reactions and engage in antisocial behaviours, impacting the overall cohesiveness of society.

5.3 Limitations and Directions for Future Research

While the present research studied actual behaviour, a limitation of the present research is that it employed confederates with scripted answers thus somewhat limiting the external validity of the results. In the real world, individuals react in some way to how they are treated. For example, members of stigmatized groups sometimes display compensatory behaviors during interactions with members of nonstigmatized groups as an attempt to reduce possible bias (e.g., Singletary & Hebl, 2009). However, the Asian confederate in this study had little option to respond to perceived negativity. On the other hand, in more natural interactions with refugees, people's implicit tendencies to dehumanize refugees and their nonverbal behaviour may also elicit systematic changes in the refugee's behaviour that could lead to self-fulfilling prophecy effects (Word, Zanna, & Cooper, 1974). Future research would benefit from exploring what effects people's implicit tendencies to dehumanize refugees and their nonverbal behaviours have on refugees.

Another limitation of the present research is that the thin slices extracted to investigate specific nonverbal behaviours may have been, at least for behaviours that are more situationally dependent, too short (Murphy et al., 2015). Future research would be advised to use longer thin slices, according to Murphy et al.'s (2015) research, and further investigate the reliability and validity of specific nonverbal behaviours displayed in a social interaction. Besides this, it should also be noted that while nonverbal behaviors are relatively more spontaneous than verbal behaviors, nonverbal behaviors can be

controlled to a certain extent, and many verbal behaviors, particularly in on-line speech, can have significant implicit influences (DePaulo & Friedman, 1998).

Future research may also be interested in investigating what effect the topic of conversation has on the closeness between the interaction partners and their nonverbal and verbal behaviours. Previous research has shown that interaction partners who are asked to carry out self-disclosure and relationship-building tasks over a longer period of time, report greater post-interaction closeness compared to interaction partners who are asked to perform small-talk tasks (Aaron et al., 1997). Furthermore, it would be interesting to investigate how conversations that clearly 'humanize' the interaction partner, would affect a person's tendency to implicitly dehumanize members of the group that the interaction partner belongs to and how this would affect their nonverbal behaviours.

5.4 Conclusion

In the present research, I used an experimental approach to examine the behavioural consequences of implicit and explicit refugee dehumanization in a social interaction. In particular, I found that increased implicit refugee dehumanization predicted less positive nonverbal behaviour and that increased explicit refugee dehumanization predicted a less positive interaction quality based on participants' verbal behaviour. This is important because it demonstrates the behavioural consequences of dehumanization in a social interaction. In particular, it demonstrates how a subtle form of dehumanization influences actual behaviour, and not just mere intentions.

Endnotes

[1] The scores for implicit dehumanization range from -120.95 to 132.30. The scores for implicit evaluation range from -106.99 to 169.98.

[2] The results for all repeated measures ANOVAs are the same if the Greenhouse-Geisser estimate is used.

[3]Another coder was used to do audio coding because one of the coders who did video coding was no longer available for personal reasons.

[4] For comparability purposes between the positive interaction scores based on video and audio coding, I ran all analyses based on audio coding with and without the item 'natural'. Since the results did not change, the results reported here based on audio coding include the item 'natural'.

[5] In the following pages, I will only describe the results of the models with an acceptable or good model fit. Please see the Annex for a detailed description of all models.

[6] The results also revealed a significant interaction between implicit refugee dehumanization and type of categorization task on positive behaviour (b = -.007, p = .05) and positive interaction (b = -.011, p = .01). Implicit refugee dehumanization positively predicted positive behaviour and positive interaction only in the evaluative categorization task condition (b = .005 and .007, ps = .01), but not in the conceptual categorization task condition (b = -.002 and -.005, p = .46 and .20).

[7] The results also showed a significant interaction between implicit Canadian dehumanization and type of categorization task on overall negativity (b = .008, p = .02). Implicit Canadian dehumanization negatively predicted overall negativity only in the

evaluative categorization task condition (b = -.006, p = .01), but not in the conceptual categorization task condition (b = .003, p = .33).

[8] Fidgeting, adapter use, frowning, a closed body posture, and facial rigidity are expected to be indicators of anxiety/uneasiness. Gesturing, nodding, smiling, leaning forward and eye contact are expected to be indicators of happiness/comfort.

[9] Frowning was reverse coded so that higher values reflect less frowning.

[10] Facial rigidity was reverse coded so that higher values reflect less rigid faces.

[11] The intercept of the change score was only significant in the model with implicit refugee dehumanization as the main predictor.

[12] The LDS model for smiling which included both implicit refugee and implicit Canadian dehumanization also revealed a marginally significant interaction between task and implicit Canadian dehumanization (b = -.012, p = .06). However, none of the simple slopes were significant (conceptual task: b = -.006, p = .22; and evaluative task: b = .006, p = .15).

[13] This latent difference score model also found a significant interaction between implicit Canadian dehumanization and type of categorization task (b = -.010, p = .05). There was a positive relationship between implicit Canadian dehumanization and frowning when participants performed the evaluative categorization task (b = .006, p = .05), but not when participants performed the conceptual categorization task (b = -.004, p = .34).

[14] The results also revealed a significant interaction effect between type of categorization task and implicit refugee dehumanization on adapter use (b = .019, p = .04). However, the simple slopes were not significant (conceptual: b = .011, p = .14; and evaluative: b = -.007, p = .14).

[15] The results for this model only revealed a marginally significant interaction effect between type of categorization task and implicit refugee dehumanization (b = .016, p = .09). However, none of the simple slopes were significant (conceptual task: b = .011, p = .15, and evaluative task: b = -.005, p = .36).

[16] Also, in the model with implicit refugee dehumanization as the main predictor, there was a main effect of task (b = -.435, p = .03).

[17] Please note that models 4 and 6 support the finding of models 1 and 2 that the correlation between the intercept and the slope is not significant (with the exception of model 6 for overall negativity and Canadian evaluation as key predictor, where b = -.11, p = .02). Similarly, models 6 and 7 support the finding of models 2 and 3 that the mean slope is significant for positive behaviour, positive interaction and overall negativity and marginally significant for overall positivity. Given that, besides the just mentioned findings, models 6 and 7 do not add valuable information to the results section, they will not be discussed further. For more information on these models please see the Annex.

[18] This main effect only appears in the models with the following key predictors: implicit refugee evaluation, implicit Canadian evaluation, explicit refugee dehumanization and explicit evaluation of refugees.

[19] The results also showed as a significant respectively marginally significant interaction effect between type of interaction partner (refugee versus Canadian) and type of categorization task (evaluative versus conceptual) on the slope (b = .22 and .26, p = .06 and .04, depending on whether implicit refugee dehumanization or implicit Canadian dehumanization is the key predictor in the model this interaction effect is significant or marginally significant). The simple effects analysis showed that the slope was significantly larger in the refugee condition than in the Canadian student condition only when participants performed the conceptual task (b = .19, p = .03), but not the evaluative

task (b = -.06, p = .47; analysis based on model 4 with implicit Canadian dehumanization as the main predictor). Moreover, the slope was significantly larger in the conceptual condition than in the evaluative condition only when participants interacted with the refugee (b = .21, p = .03), and not when they interacted with the Canadian student (b = -.05, p = .56). No other effects were significant.

[20] The results also revealed an interaction effect between implicit Canadian dehumanization and type of categorization task (evaluative versus conceptual) on the slope of positive interaction (b = -.005, p = .03). The simple slopes analysis based on model 4 showed that there was a significant relationship between implicit Canadian dehumanization and the slope of positive interaction in the evaluative categorization task condition (b = -.005, p = .03), but not in the conceptual categorization task condition (b = -.054, p = .61).

[21] The results also showed a marginally significant interaction of type of interaction partner (refugee versus Canadian) and categorization task (evaluative versus conceptual) on the slope of overall positivity. However, this effect only appeared when implicit Canadian dehumanization was the key predictor in the model (b = .37, p = .06), but not when implicit refugee dehumanization was the key predictor in the model (b = .28, p = .13 and .14). The simple effects analysis showed that the slope was larger in the refugee condition than in the Canadian condition only when participants performed the conceptual categorization task (b = .29, p = .04), but not when participants performed the evaluative categorization task (b = -.08, p = .54). Also, the slope tended to be larger in the conceptual categorization task condition than in the evaluative categorization task condition only when participants interacted with the refugee (b = .26, p = .08), but not when participants interacted with the Canadian student (b = -.11, p = .39).

[22] The results also revealed a marginally significant interaction between implicit Canadian dehumanization and type of categorization task (evaluative versus conceptual)

on the slope of overall negativity (b = .005, p = .03). The simple slopes analysis based on model 4 showed that there was a marginally significant relationship between implicit Canadian dehumanization and the slope of overall negativity in the evaluative categorization task condition (b = .005, p = .09), but not in the conceptual categorization task condition (b = -.009, p = .67).

[23] Only model 1 for positive behaviour could be interpreted. The first models for the other dependent variables all produced a not positive definite residual covariance matrix. Therefore, only model 1 for positive behaviour can be used to judge whether the baseline measure (participants' expressiveness or style in their verbal behaviour) predicted the slope.

[24] The results also revealed a significant interaction between type of interaction partner and categorization task on the slope in these models (b = .21 to .25, p = .00 to .02). The simple effects analysis based on model 4 with implicit refugee dehumanization as the key predictor showed that the slope was significantly smaller in the refugee condition than in the Canadian condition when participants performed the evaluative categorization task (b = -.13, p = .03). However, the slope was marginally significantly larger in the refugee condition than in the Canadian condition when participants performed the conceptual categorization task (b = .12, p = .07). Also, the slope was larger in the conceptual categorization task condition than in the evaluative categorization task condition only when participants interacted with the refugee (b = .17, p = .01), but not when participants interacted with the Canadian student (b = -.08, p = .19).

If the same analysis is done based on model 4 with implicit Canadian dehumanization as the main predictor slightly different results emerge. The slope is significantly smaller in the refugee condition than in the Canadian condition when participants performed the evaluative categorization task (b = -.12, p = .04), but there is no difference between the slope in the refugee condition and the slope in the Canadian condition when participants

performed the conceptual categorization task (b = .09, p = .20). Also, the slope is only marginally significantly larger in the conceptual categorization task condition than in the evaluative categorization task condition only when participants interacted with the refugee (b = .13, p = .06), but not when participants interacted with the Canadian student (b = -.08, p = .20).

[25] There was also a significant interaction between type of interaction partner and categorization task on the intercept (b = -.47 and -.48, p = .04). The simple effects analysis showed that there was a marginally significant difference in the intercept between the refugee and Canadian condition (refugees had a higher intercept), only when participants performed the evaluative categorization task (b = .28, p = .07), but not the conceptual categorization task (b = -.20, p = .26). Also, there was a marginally significant difference in the intercept between the evaluative and conceptual task condition only in the refugee condition (the intercept was lower in the conceptual condition, b = -.30, p = .10), but not in the Canadian condition (b = .18, p =.23).

[26] The results also revealed a significant interaction between task and implicit refugee dehumanization on the intercept (b = -.01, p = .02). The simple slope analysis showed that implicit dehumanization was positively related to the intercept only in the evaluative task condition (b = .006, p = .03), but not in the conceptual task condition (b = -.006, p = .17). Furthermore, the results showed a significant interaction between type of interaction partner and task on the intercept (b = -.73, p = .02). This effect only appeared when Canadian dehumanization was the main predictor. The simple effects analysis for this interaction showed that the intercept was significantly lower in the refugee condition than in the Canadian condition when participants performed the conceptual categorization task (b = -.48, p = .04), but not when participants performed the evaluative categorization task (b = .25, p = .20). Also, the intercept was lower in the conceptual task condition than in the evaluative condition only when participants interacted with the refugee (b = -.43, p = .08), but not when participants interacted with a Canadian (b = .31, p = .11).

[27] Also, the results showed a significant interaction between type of interaction partner and categorization task on the intercept (b = -.79, p = .01) and the slope of overall positivity (b = .51, p = .00). The simple effects analysis showed that when participants were asked to perform the evaluative task, participants in the refugee condition had a higher intercept (b = .58, p = .00) and a smaller slope (b = -.29, p = .00) than participants in the Canadian condition. When participants were asked to perform the conceptual task, participants did not differ in their intercepts (b = -.21, p = .37). However, they did have a larger slope in the refugee condition than in the Canadian condition (b = .22, p = .04). Also, the intercept was smaller (b = -.50, p = .03) and the slope larger (b = .37, p = .00) in the conceptual condition than the evaluative condition only when participants interacted with a refugee, but not when they interacted with a Canadian student (intercept: b = .28, p = .15; and slope: b = -.14, p = .11).

[28] Also, the results revealed a marginally significant interaction between categorization task and implicit refugee dehumanization on the slope of overall negativity (b = .005, p = .08) as well as a significant respectively marginally significant interaction between type of interaction partner and categorization task on the slope of overall negativity (b = -.29 and -.32, p = .06 and .03; significance levels vary depending on whether implicit refugee dehumanization or implicit Canadian dehumanization is the key predictor). In regards to the first interaction, the simple slopes analysis showed a marginally significant interaction between the implicit refugee dehumanization and the slope of overall negativity in the evaluative categorization task condition (b = -.002, p = .09), but not in the conceptual categorization task condition (b = .002, p = .31). In regards to the second interaction, the simple effects analysis based on model 5 with implicit refugee dehumanization as the key predictor showed a marginally significantly larger slope in the refugee condition than in the Canadian condition only when participants performed the evaluative task (b = .16, p = .08), but not when participants performed the conceptual task (b = -.16, p = .15). Also, the slope was significantly smaller in the conceptual task

condition than in the evaluative task condition only when participants interacted with the refugee (b = -.29, p = .01), but not when they interacted with the Canadian student (b = .03, p = .77).

[29] The results also revealed a marginally significant interaction between categorization task and implicit Canadian dehumanization on the intercept of overall negativity (b = .007, p = .08) and a marginally significant interaction effect between type of interaction partner and categorization task on the intercept of overall negativity (b = .48, p = .08). In regards to the first interaction, the simple slope analysis showed a significant relationship between implicit Canadian dehumanization and the intercept of overall negativity only in the evaluative task condition (b = -.005, p = .02), but not in the conceptual task condition (b = .001, p = .64). In regards to the second interaction, the results of the simple effect analysis showed that there was no difference in the intercept between the refugee and Canadian condition for either task (evaluative: b = -.21, p = .24; and conceptual: b = .27, p = .20). However, the intercept was higher for the conceptual task condition than the evaluative task condition only when participants were in the refugee condition (b = .46, p = .03), but not when they were in the Canadian condition (b = -.01, p = .94).

[30] For models 1 to 3, allowing for the correlation between the intercept and the slope to be estimated produced mixed results (see Tables 169 to 175 in the Annex). For closed body posture, eye contact, facial rigidity and fidgeting, the estimation of the correlation led to models that did not converge and could not be interpreted. In contrast, for adapter use, the estimation of the correlation, while non-significant, was essential. The models for adapter use did not converge if the correlation between the intercept and the slope was not estimated. Similarly, for leaning forward, failure to estimate the significant correlation led to a model that did not converge. Furthermore, for frowning, estimating the correlation impacted the effect of the baseline measure on the slope and the convergence of the model. In particular, if the correlation between the intercept and the slope was not estimated, then there was a marginally significant negative effect of the

baseline measure on the slope of frowning. If the correlation between the intercept and the slope was estimated while the baseline measure was also allowed to predict the slope, the models for frowning did not converge. Finally, for smiling the results were fairly similar regardless of whether the correlation between the intercept and the slope was estimated or not. Despite this, model 1, which estimated the correlation and had the baseline measure predict both the intercept and the slope, had the best model fit. All these results were kept in mind when interpreting the results of the latent growth models 4 to 8.

[31] This was only the case when the model also allowed for the correlation between the intercept and the slope (b = -.433, p = .00). When this correlation was not allowed, the mean slope and the variation of the slope were both not significant (b = -.012, p = .88 and b = .116, p = .15). However, the latter model had a slightly poorer model fit than the first model).

[32] This was only the case when the model also allowed for the correlation between the intercept and the slope (b = -.348, p = .12). When this correlation was not allowed, the mean slope and the variation of the slope were both not significant (b = -.012, p = .88 and b = .116, p = .15).

[33] These predicted values for the slope are based on the regression equation derived from model 5 for gestures with implicit refugee dehumanization as the main predictor. Furthermore, the model fit for all models 4 and 5 for fidgeting across predictors ranged from: X^2 (7 to 11) = 12.468 to 19.412, p = .01 to .11; CFI = .943 to .961, RMSEA: .082 to .145, RMSEAs: .000-.156 to .045-.213.

[34] The model fit for this model was mediocre, $X^2(7)$ = 13.086, p = .07; CFI = .959, RMSEA = .105, RMSEA 90% CI = .000-.192.

[35] The model fit for models 4 to 6 was acceptable (X^2(5 to 9) = 8.344 to 15.721, p = .06 to .08, CFIs = .926 to .963, RMSEAs = .092 to .103, RMSEA 90% CIs = .000-.175 to .000-

.198). In the latent growth models 7 and 8, as well as the latent difference score model, there is no significant interaction between type of interaction partner and implicit Canadian evaluation (b = .005 and .007, p = .13 to .28). However, the latter three models have a poorer model fit than models 4 to 6 (LGM 7 and 8 & LDS model: X^2(3 to 12) = 7.688 to 18.901, p = .05 and .09, CFI = .883 to .924, RMSEA = .085 to .141, RMSEA 90% CI = .000-.155 to .000-.268).

[36] There was also a marginally significant interaction between type of categorization task and implicit refugee dehumanization on the slope (b = -.011, p = .08). The simple slope analysis showed that there was a significant positive relationship between implicit refugee dehumanization and adapter use in the conceptual categorization task condition (b = .017, p = .05) and a significant negative relationship between implicit refugee dehumanization and adapter use in the evaluative categorization task condition (b = -.012, p = .03)

[37] The only additional finding was a significant interaction between type of categorization task and implicit refugee dehumanization on the intercept of leaning forward (model 4: b = -.011, p = .09). However, neither of the simple slopes were significant (conceptual task: b = -.006, p = .26; and evaluative task: b = .005, p = .17).

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Appendices

Appendix A: Ethics

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Western

Use of Human Subjects - Ethics Approval Notice

Review Number	**13 08 05**	**Approval Date**	**13 -08 02**
Principal Investigator	**Vickie Esses/Alina Sutter/Stelian Medianu**	**End Date**	**14 04 30**
Protocol Title	**Two studies: Personality and perception and social relationships**		
Sponsor	**n/a**		

This is to notify you that The University of Western Ontario Department of Psychology Research Ethics Board (PREB) has granted expedited ethics approval to the above named research study on the date noted above.

The PREB is a sub-REB of The University of Western Ontario's Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario. (See Office of Research Ethics web site: http://www.uwo.ca/research/ethics/)

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the University's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the PREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of research assistant, telephone number etc). Subjects must receive a copy of the information/consent documentation.

Investigators must promptly also report to the PREB:
a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) all adverse and unexpected experiences or events that are both serious and unexpected;
c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to the PREB for approval.

Members of the PREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the PREB.

Clive Seligman Ph.D.

Chair, Psychology Expedited Research Ethics Board (PREB)

The other members of the 2012-2013 PREB are: Mike Atkinson (Introductory Psychology Coordinator), Rick Goffin, Riley Hinson Albert Katz (Department Chair), Steve Lupker, and Adam Piraino (Graduate Student Representative)

CC: UWO Office of Research Ethics

This is an official document. Please retain the original in your files.

Appendix B: Pictures for Sequential Priming Procedure

Negative Animal Pictures




Positive Animal Pictures

Appendix C: Bio for Canadian student versus refugee manipulation

Refugee

My name is **Sayra** and I am in my second year studying Social Sciences at Western. While it can be very stressful at times, I really like Western and my program, I feel like I am learning a lot and the people are great. I came here in 2011 **through the student refugee program from the World University Service of Canada**. I was born in **Burma**, but my family and I had to **flee to Thailand** when I was very young **due to the civil war**. So, I lived **there in a refugee camp** basically my whole life before I was accepted to this program. I study a lot because I hope **that one day I will be able to** help my family and **the people of my country**. When I am not studying I like to hang out with my friends, listen to music and dance.

Canadian

My name is **Sarah** and I am in my second year studying Social Sciences at Western. While it can be very stressful at times, I really like Western and my program, I feel like I am learning a lot and the people are great. I came here in 2011 **directly after finishing high school in Guelph**. I was born in **London**, but my family and I had to **move from here** when I was very young **because of my dad's job**. So, I lived **in Guelph** basically my whole life before I was accepted to this program. I study a lot because I hope **to get a good job one day so I can** help my family and **afford a nice lifestyle**. When I am not studying I like to hang out with my friends, listen to music and dance.

1.

Appendix D: Interaction questions and script for confederates

Confederate 1 (assistant during sound and video check)

1. What foreign country would you most like to visit? What attracts you to this place?

Oh, I would love to go to London in England… I have never been there but I heard so much about it… there is just so much to do, I would love to see all the historical sites, especially the Tower Bridge… and all the museums, … I heard the Tate Modern is really nice… and then of course the royal palaces, the Buckingham Palace… I would also love to go shopping there and to go and see how Harrods looks like… I think it is a very expensive place but apparently it is very nice… actually, I am planning a trip to England right now, I hope I will be able to go there after I graduate… it would be really nice… How about you?

Confederate 2 (Canadian student or refugee)

Warm-up exercise

1. Where do you live: on- or off-campus? Do you like it?

I live off-campus… I guess most people do, I don't know… I have two roommates and we share an apartment close to downtown… I really like it because we're close to everything and we also are really good friends… we do many things together… I guess it's nice to come home and see that you're not alone… we often eat together and talk about all kinds of things. We have a very homey atmosphere… it's pretty cool, I like it.

Main interaction

2. What is your favourite class at Western so far? Why?

Uff… let me think…. I would say I really liked the anthropology course I took last winter… it was about all kinds of things… really interesting… and the prof was good. I loved learning about people and cultures… also, compared to other classes the class was really interactive and the exams were not too bad… I mean, most of us got good grades, which is always a good thing, right? So, yeah, I would say this is the course I liked the most so far.

[Background Info: The class described here is 'Introduction to Sociocultural Anthropology', Prof.: Mrs. Terry Webb. Short description: This course is a survey of the basic paradigms and concepts of Sociocultural Anthropology, including the study of religions, politics, social organizations, gender, economics and language.]

3. What was the best gift you ever received and why?

I don't have to think too long about this… for my 18th birthday I got this necklace from my mom… it is very simple but it originally belonged to my grandma… and my grandma gave it to my mom on her 18th birthday… so I guess it's sort of a tradition in our family… I really like it because it has sentimental value… I hope I'll be able to give it to my daughter or even my granddaughter one day… who knows? [smiles]

4. Do you prefer eating at the university or at home? What are the advantages and disadvantages of each?

Well, it depends… some days I am really busy, for example, Tuesdays and Thursdays I have most of my classes, so I don't really have a lot of time to cook or prepare anything at home, so I end up eating here at the university with my friends… It's nice to hang out with them, but yeah, the choices at UCC are not really the healthiest ones… so, I like to vary a bit… I try to also eat things we cook at home… I mean with my roommates… So yeah, if I think of advantages and disadvantages, I would say that eating at the university requires less time, but at the same time it is not really healthy… and at home it is up to you what kind of food you prepare, you have more choices, but again, it takes time and you have to know how to cook…

5. If you had to advice a new student, what are the 3 most valuable things for a new student to bring to university?

This is really a tough question… I am not really sure what to say… I remember when I came here, the first thing I had to figure out was how the bus system in the city works to even get to school [smiles] *and where my classes were… the campus seemed so big… a good map would have been helpful for sure… but I guess this doesn't really answer the question… uhm, three things for a new student to bring to university… uhm… I guess, besides having a good computer, I would say more intangible things like motivation to study, openness to experience something new, to meet new people… things like these… what do you think?*

Appendix E: Adjective definitions for coders

pleasant	having pleasing manners, behaviour, or appearance
cruel	devoid of humane feelings; disposed to inflict pain
unfriendly	not friendly; unsympathetic, inhospitable, unfavourable
unlikable	not likable; lacking qualities that are pleasant or agreeable
cold	lacking interpersonal warmth, friendliness, and compassion
engaging	draw positive attention to themselves
anxious	uneasy; nervous; worried
polite	behaving in a way that is socially correct, respectful, considerate
enjoyable	pleasurable and satisfying
natural	unforced; easy; effortless
awkward	lacking ease or grace; causing embarrassment or unease
uncomfortable	causing discomfort or annoyance

Appendix F: Specific Nonverbal Behaviours Coding Instructions (adapted from Trawalter, 2006)

1. Fidgeting: This is one of the hardest codes! Keep a few things in mind: fidgeting does *not* accompany speech. Fidgeting is 'non-sense' gestures. Usually, fidgeting is repetitive although that's not always the case. A '7' denotes constant fidgeting throughout the clip. A '1' denotes no fidgeting at all. A '4' is how much the 'average' participant fidgets. Fidgeting may be easier to distinguish (from gesturing/adapter use) at fast forward speed.

2. Gesture: Gestures accompany, clarify, complement, and/or augment speech. They're 'sensical' in the sense that they make participants seem more socially fluid and more 'active' in the conversation. A '1' is no gestures at all. A '7' is lots of gestures (when speaking) – think big hand movements and *illustrative* movements!

3. Nodding: This one is relatively easy. Give a '1' for participants who don't nod at all and a '7' for participants who nod the entire time that they are not speaking. Again, give a '4' for how much the 'average' participant nods.

4. Eye contact: You can get a sense of how much eye contact they participants are making by getting a sense of how much they look away (i.e., averted gaze). Give a '1' to participants who never look at their partner (these participants will be looking to the side, looking down, or looking directly into the camera the entire time – some of the participants actually do this!). Give a '7' to participants who never break eye contact (these participants will not avert their gaze and they will not look to the camera or around the room). Again, give a '4' for how much the 'average' participant gazes directly at their partner. In this case, a '4' seems like a 'normal' amount of eye contact.

5. Smile: Give a '1' for participants who don't smile at all. Give a '7' for participants who smile the entire time. And, give a '4' for how much the 'average' participant smiles. Again, in this case, I think a '4' looks more normal (than, say, a '7' – which tends to look over-eager).

6. Frown: Rating frowning is difficult because no participant is actively angry. However, some participants are visibly irritated and frown. Remember, try to use the full scale (from 1 to 7). Also, do not worry about your ratings for smiling. Participants can (and do) smile *and* frown during the same clip! Give a '1' for participants who don't frown at all. Give a '7' for participants who frown a lot (compared to the 'average' participant).

7. Lean forward: Give a '4' for participants who are sitting straight up (90 degree angle from chair!). Give a '7' for participants who are leaning forward a lot. Give a '1' for participants who are leaning way back in their chair (usually, this will mean that their legs are sprawled out in front of them!).

8. Closed body posture: Think of rating 'how much space does the participant occupy?' For participants who 'take up a lot of space' – i.e., participants who are sprawled out, arms open, chest out – give them a '1.' For participants who 'take up very little space' – i.e., participants who are 'folded' onto themselves with arms in and/or crossed, legs crossed, elbows in – give them a '7.'

9. Adapters: Adapters are any hand movements that seem to have a purpose but do not accompany speech – they're not gestures; e.g., playing with a watch, fixing clothes, messing with hair, scratching head/harm/leg, wiping off shoe…

10. Facial rigidity: For this question, give a '7' for participants whose face doesn't move at all – these participants' faces will seem frozen! Give a '1' for participants whose face is very expressive. I find that looking at the cheeks is very helpful to rate this!

Appendix G: Sample latent difference score models

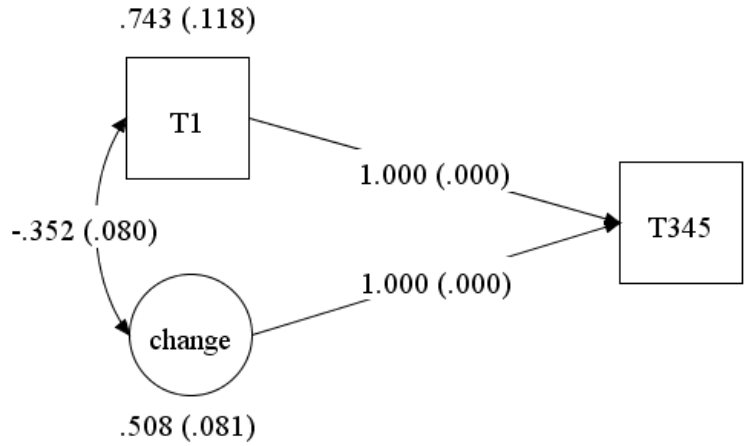


Figure 1. LDS model for nonverbal positive behaviour without any predictors for change (shown are unstandardized estimates and standard errors in brackets; T1 = baseline, T345 = main interaction).

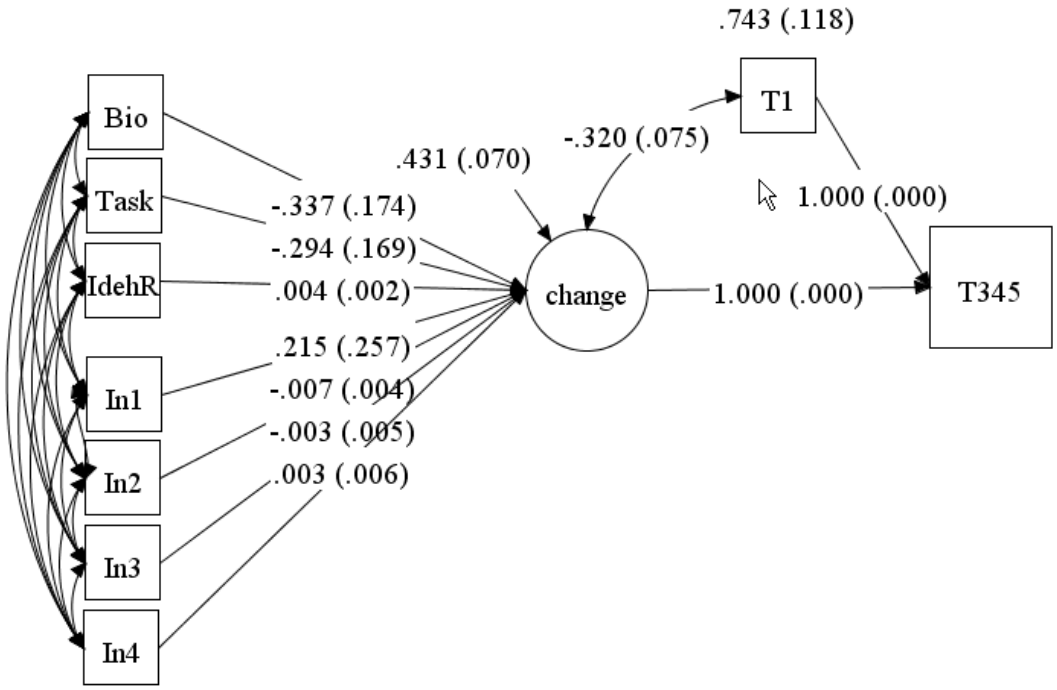


Figure 37. LDS model for nonverbal positive behaviour with predictors for change (shown are unstandardized estimates and standard errors in brackets; Bio = refugee or Canadian student as interaction partner, Task = conceptual or evaluative categorization task, IdehR = implicit refugee dehumanization, In1 = interaction between bio and categorization task, In2 = interaction between bio and implicit refugee dehumanization, In3 = interaction between implicit refugee dehumanization and categorization task, In4 = interaction between bio, implicit refugee dehumanization and categorization task).

Appendix H: Means, standard deviations and correlations for data based on video coding (adjective ratings)

Table 6
Means, standard deviations and correlations for data based on video coding (adjective ratings)

		M	*SD*	*S*	*K*	1	2	3	4	5	6	7	8	9
1	Implicit refugee dehumanization	11.40	42.55	.29	.04	1.00								
2	Implicit Canadian dehumanization	.33	49.56	-.07	-.07	.58**	1.00							
3	Implicit refugee evaluation	9.92	47.75	.64	2.02	-.10	-.03	1.00						
4	Implicit Canadian evaluation	3.69	46.52	-.02	.08	.05	-.02	.48**	1.00					
5	Explicit refugee dehumanization	4.60	1.14	-.50	.37	.13	.11	.08	.00	1.00				
6	Explicit refugee evaluation	58.04	21.00	-.37	.60	.05	-.08	-.17	-.16	.18	1.00			
7	Positive behaviour - baseline (T1)	4.41	.87	-.09	.02	.15	.13	.17	.20	.07	.18	1.00		
8	Positive behaviour - main interaction (T345)	5.01	.74	-.31	-.52	.12	.13	.03	-.03	.11	.20	.61**	1.00	
9	Positive interaction - baseline (T1)	3.97	.83	-.01	.11	.07	.11	.24*	.15	.05	.12	.85**	.55**	1.00
10	Positive interaction - main interaction (T345)	4.41	.80	-.02	-.85	.06	.11	.10	-.05	.04	.08	.46**	.89**	.54**
11	Overall positivity - baseline (T1)	4.22	1.09	-.27	-.57	.15	.12	.17	.24*	.03	.20	.92**	.52**	.81**
12	Overall positivity - main interaction (T345)	4.51	.90	-.27	-.43	.19	.15	-.07	-.09	.14	.24*	.54**	.93**	.44**
13	Overall negativity - baseline (T1)	3.58	1.13	.47	-.62	-.10	-.07	-.16	-.16	-.09	-.20	-.88**	-.56**	-.85**
14	Overall negativity - main interaction (T345)	3.30	.97	.19	-.67	-.18	-.17	-.03	.08	-.13	-.22*	-.56**	-.94**	-.48**

Note. *$p < .05$, ** $p < .01$, *S* = skewness, *K* = kurtosis

Table 6

Means, standard deviations and correlations for data based on video coding (adjective ratings) – continued 1

		10	11	12	13
1	Implicit refugee dehumanization				
2	Implicit Canadian dehumanization				
3	Implicit refugee evaluation				
4	Implicit Canadian evaluation				
5	Explicit refugee dehumanization				
6	Explicit refugee evaluation				
7	Positive behaviour - baseline (T1)				
8	Positive behaviour - main interaction (T345)				
9	Positive interaction - baseline (T1)				
10	Positive interaction - main interaction (T345)	1.00			
11	Overall positivity - baseline (T1)	.36**	1.00		
12	Overall positivity - main interaction (T345)	.82**	.46**	1.00	
13	Overall negativity - baseline (T1)	-.44**	-.89**	-.50**	1.00
14	Overall negativity - main interaction (T345)	-.83**	-.47**	-.93**	.53**

Appendix I: Means, standard deviations and correlations for data based on video coding (specific nonverbal behaviours)

Table 7

Means, standard deviations and correlations for data based on video coding (specific nonverbal behaviours)

		M	*SD*	*S*	*K*	1	2	3	4	5	6	7	8	9
1	Implicit refugee dehumanization	11.40	42.55	.29	.04	-								
2	Implicit Canadian dehumanization	.33	49.56	-.07	-.07	.58**	-							
3	Implicit refugee evaluation	9.92	47.75	.64	2.02	-.10	-.03	-						
4	Implicit Canadian evaluation	3.69	46.52	-.02	.08	.05	-.02	.48**	-					
5	Explicit dehumanization	4.60	1.14	-.50	.37	.13	.11	.08	.00	-				
6	Explicit evaluation	58.04	21.00	-.37	.60	.05	-.08	-.17	-.16	.18	-			
7	Fidgeting - (T1)	2.87	1.45	.89	.57	.14	.01	-.07	.02	.09	.03	-		
8	Gestures - (T1)	1.26	.81	3.34	11.07	.03	.07	.04	-.07	-.20	.05	.16	-	
9	Nodding - (T1)	2.65	1.26	.63	-.27	-.03	-.05	.05	.13	.17	.02	-.25*	-.12	-
10	Eye contact - (T1)	6.32	.96	-1.82	3.53	.05	.05	.13	.08	.17	.23*	-.23*	-.39**	.18
11	Smile - (T1)	3.87	1.71	-.03	-.93	.14	.14	.10	.24*	.04	.14	.05	.24*	.03
12	Lean forward - (T1)	3.75	1.08	.35	-.64	.03	.17	-.21	-.04	.02	.17	-.11	-.03	.04
13	Closed body - (T1)	4.22	1.06	-.21	-.61	.06	.12	-.03	-.06	.17	.11	-.47**	-.15	.33**
14	Frown (R) - (T1)	5.18	1.14	-.48	-.43	.15	.12	.18	.19	.12	.06	.03	.12	-.15
15	Adapters - (T1)	2.89	1.65	.40	-.98	-.01	.06	-.17	-.23*	.07	-.03	.28*	.04	-.17
16	Facial rigidity (R) - (T1)	3.86	1.32	-.16	-.29	.08	.06	.08	.26*	.14	.09	.09	.28*	.11
17	Fidgeting - (T345)	3.13	1.32	.91	.49	.07	.01	-.20	-.07	.05	.14	.52**	.02	-.12
18	Gestures - (T345)	2.22	1.15	.78	-.23	-.08	.15	.00	-.01	-.09	-.08	-.01	.31**	.28*
19	Nodding - (T345)	2.62	.85	.35	-.52	.18	.02	.00	-.03	.02	.16	-.40**	-.05	.44**
20	Eye contact - (T345)	4.40	.87	-.17	-.64	.19	.22	-.07	.03	.13	.11	-.04	-.18	.10
21	Smile - (T345)	3.71	1.19	.02	-.80	.14	.20	-.03	.05	.10	.25*	.02	.21	.02
22	Lean forward - (T345)	3.76	1.08	.61	.14	.03	.24*	-.08	.01	.04	.12	-.24*	-.08	.20
23	Closed body - (T345)	4.06	.97	-.05	-.30	-.03	.02	-.09	.01	.07	.05	-.42**	-.10	.34**
24	Frown (R) - (T345)	4.97	.95	-.52	.20	.11	.15	.07	-.04	.09	.04	.07	-.01	-.21
25	Adapters - (T345)	3.42	1.32	.01	-.91	.14	.12	.01	.08	.04	-.05	.08	.04	-.26*
26	Facial rigidity (R) - (T345)	4.44	1.03	.64	-.06	.10	.05	.00	.11	.17	.29**	.04	.20	.14

Table 7

Means standard deviations and correlations for data based on video coding (specific nonverbal behaviours) – continued 1

		10	11	12	13	14	15	16	17	18	19	20
11	Smile - baseline (T1)	.02	-									
12	Lean forward - baseline (T1)	.03	.24*	-								
13	Closed body - baseline (T1)	.22	.21	.39**	-							
14	Frown (R) - baseline (T1)	.11	.71**	.12	.12	-						
15	Adapters - baseline (T1)	-.12	-.16	-.16	-.26*	-.10	-					
16	Facial rigidity (R) - baseline (T1)	-.11	.71**	.13	.12	.51**	-.04	-				
17	Fidgeting - main interaction (T345)	-.27*	-.05	.23*	-.32**	-.12	.10	.01	-			
18	Gestures - main interaction (T345)	-.10	.14	-.04	-.03	.01	-.05	.17	.04	-		
19	Nodding - main interaction (T345)	.19	.18	.03	.40**	.09	-.30**	.16	-.24*	.06	-	
20	Eye contact - main interaction (T345)	.23*	.17	-.03	.04	.25*	-.07	.15	-.11	.04	.45**	-
21	Smile - main interaction (T345)	.00	.64**	.13	.18	.51**	-.09	.43**	.05	.34**	.12	.19
22	Lean forward - main interaction (T345)	.00	.19	.75**	.50**	.03	-.17	.15	-.01	.06	.11	.00
23	Closed body - main interaction (T345)	.04	.23*	.34**	.73**	.12	-.25*	.25*	-.31**	-.12	.30**	-.04
24	Frown (R) - main interaction (T345)	-.01	.36**	-.04	.06	.65**	.08	.29**	-.01	.16	.05	.33**
25	Adapters - main interaction (T345)	-.15	.06	.07	-.07	.02	.42**	.08	.05	-.26*	-.25*	.00
26	Facial rigidity (R) - main interaction (T345)	.00	.52**	.09	.17	.38**	-.25*	.53**	.17	.24*	.18	.06

Table 7

Means standard deviations and correlations for data based on video coding (specific nonverbal behaviours) – continued 2

		21	22	23	24	25
22	Lean forward - main interaction (T345)	.10	-			
23	Closed body - main interaction (T345)	.11	.50**	-		
24	Frown (R) - main interaction (T345)	.67**	-.10	-.03	-	
25	Adapters - main interaction (T345)	-.02	.07	-.09	.13	-
26	Facial rigidity (R) - main interaction (T345)	.69**	.02	.14	.40**	-.13

Appendix J: Means, standard deviations and correlations for data based on audio coding

Table 8
Means, standard deviations and correlations for data based on audio coding

		M	*SD*	*S*	*K*	1	2	3	4	5	6	7	8
1	Implicit refugee dehumanization	12.27	40.36	.34	.14	1.00							
2	Implicit Canadian dehumanization	2.74	49.60	-.17	.01	.56**	1.00						
3	Implicit refugee evaluation	9.53	47.77	.68	2.20	-.11	-.02	1.00					
4	Implicit Canadian evaluation	3.81	46.37	.05	.06	-.03	-.09	.48**	1.00				
5	Explicit refugee dehumanization	4.66	1.16	-.60	.44	.12	.09	.10	-.02	1.00			
6	Explicit refugee evaluation	59.80	20.69	-.24	.38	-.01	-.09	-.21	-.23*	.20	1.00		
7	Positive behaviour - T1	5.79	.40	-.21	-.18	-.12	-.20	.05	.10	-.02	.22	1.00	
8	Positive behaviour - T345	5.53	.46	-.06	-.78	.05	-.08	-.04	-.12	-.01	.22	.44**	1.00
9	Positive interaction - T1	5.33	.47	-.65	.63	-.13	-.13	.03	.02	.02	.21	.90**	.40**
10	Positive interaction - T345	4.99	.61	-.38	-.12	-.04	-.14	-.06	-.08	-.02	.13	.34**	.88**
11	Overall positivity - T1	4.87	.49	.09	.00	-.06	-.19	.03	.00	-.03	.13	.82**	.43**
12	Overall positivity - T345	4.76	.59	.17	-.36	.08	-.02	-.07	-.06	-.03	.21	.45**	.87**
13	Overall negativity - T1	1.94	.45	1.00	1.90	.07	.22	-.06	-.10	.06	-.24*	-.75**	-.45**
14	Overall negativity - T345	2.36	.56	.87	1.40	-.11	-.07	.05	.17	.02	-.09	-.34**	-.84**

Note. *$p < .05$, ** $p < .01$, *S* = skewness, *K* = kurtosis

Table 8
Means, standard deviations and correlations for data based on audio coding – continued 1

		9	10	11	12	13
1	Implicit refugee dehumanization					
2	Implicit Canadian dehumanization					
3	Implicit refugee evaluation					
4	Implicit Canadian evaluation					
5	Explicit refugee dehumanization					
6	Explicit refugee evaluation					
7	Positive behaviour - T1					
8	Positive behaviour - T345					
9	Positive interaction - T1	1.00				
10	Positive interaction - T345	.33**	1.00			
11	Overall positivity - T1	.82**	.33**	1.00		
12	Overall positivity - T345	.39**	.75**	.37**		
13	Overall negativity - T1	-.71**	-.33**	-.69**	-.39**	1.00
14	Overall negativity - T345	-.32**	-.76**	-.34**	-.70**	.36**

Note. *$p < .05$, ** $p < .01$, *S* = skewness, *K* = kurtosis

Appendix K: Schematic Representations of the Formulas for the Calculation of Implicit Dehumanization and Evaluation

Table 9

Formula for the Calculation of the Implicit Dehumanization of Refugees

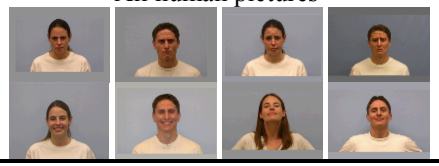
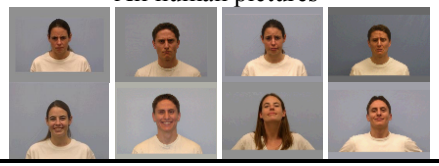
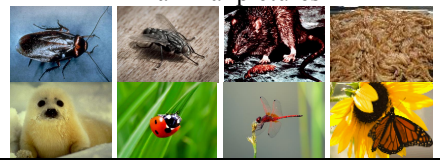
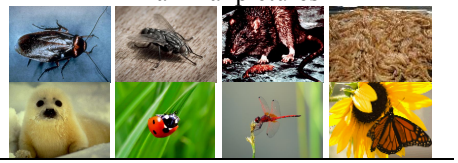
Refugee-Animal Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All animal pictures 	-	Average RT for all trials with… (+++) Prime: Refugee All animal pictures 	=>	**Refugee Dehumanization** = Refugee-Animal Association - Refugee-Human Association
Refugee-Human Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All human pictures 	-	Average RT for all trials with… (+++) Prime: Refugee All human pictures 		

Table 10

Canadian-Animal Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All animal pictures 	-	Average RT for all trials with… (+++) Prime: Canadian All animal pictures 	=>	**Canadian Dehumanization** = Canadian-Animal Association - Canadian-Human Association

Formula for the Calculation of the Implicit Dehumanization of Canadians

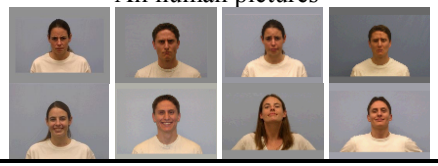
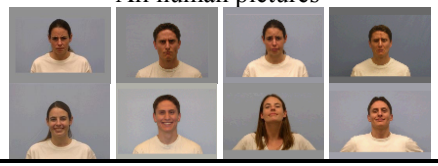
Canadian-Human Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All human pictures 	-	Average RT for all trials with… (+++) Prime: Canadian All human pictures 

Table 11

Formula for the Calculation of the Implicit Evaluation of Refugees

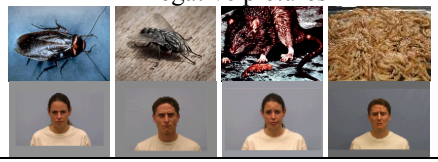
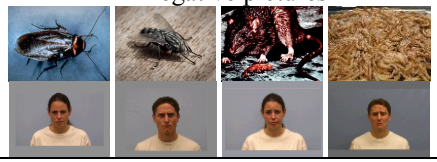
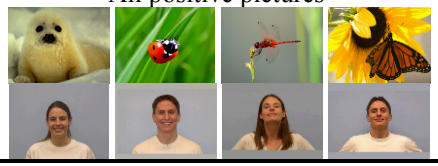
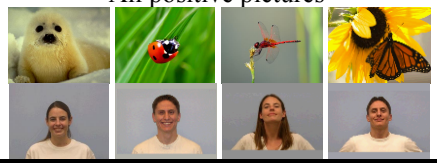
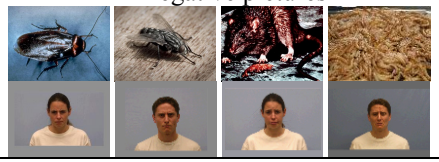
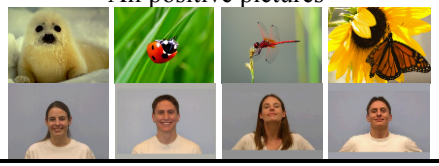
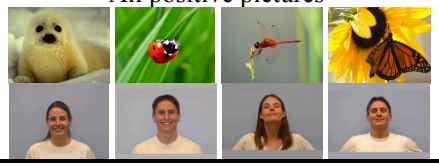
Refugee-Negative Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All negative pictures 	-	Average RT for all trials with… (+++) Prime: Refugee All negative pictures 	=>	**Refugee Evaluation** = Refugee-Negative Association - Refugee-Positive Association
Refugee-Positive Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All positive pictures 	-	Average RT for all trials with… (+++) Prime: Refugee All positive pictures 		

Table 12

Formula for the Calculation of the Implicit Evaluation of Canadians

Canadian-Negative Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All negative pictures 	-	Average RT for all trials with… (+++) Prime: Canadian All negative pictures 		
Canadian-Positive Association	=	Average RT for all trials with… (+++) Prime: Blank Screen All positive pictures 	-	Average RT for all trials with… (+++) Prime: Canadian All positive pictures 	=>	**Canadian Evaluation** = Canadian-Negative Association - Canadian-Positive Association

Curriculum Vitae

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Presentations:

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