Impacts of implicit normative evaluations on stereotyping and prejudice

by

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

The present research examined how other people's evaluations towards social groups will develop and how these evaluations will affect discriminatory behaviour outside of conscious effort. By living in a society people are exposed to other people's preferences or beliefs and these culturally shared preferences or beliefs can become automatic over time. I call this construct implicit normative evaluations. In the first series of studies I developed and validated implicit normative evaluations measures. Study 2 demonstrated that implicit normative evaluations would develop by exposure to cultural norms. Study 3 showed that those who were exposed to an audience who laughed at offensive racist jokes were more likely to have negative implicit normative evaluation towards a target group and were more likely to engage in discriminatory behaviour than those who were exposed to an audience who did not laugh at the racist jokes. Finally in Study 4, I examined the consequences of implicit normative evaluations towards Black people and found that implicit normative evaluations played a role in the shooter bias. The implications of implicit normative evaluations in developing potential interventions for prejudice reduction will be discussed.

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CHAPTER 1: INTRODUCTION

One of the older boys remarked about a schoolmate, "Don't you know that Harry is a Jew?" I had never met a Jewish boy before, and personally didn't care whether or not Harry—who seemed a likeable fellow—was a Jew. But the older boy's tone of voice was enough to convince me that I had better not make Harry my friend. Thereafter I avoided Harry. And, although I could not understand why we should dislike Jews, I gradually accepted the prejudice. It seems strange that a feeling of antagonism toward Harry should grow up on me. But it did.

—Allport, 1954 (p. 287)

Allport (1954) observed that one's evaluations towards social groups are influenced by the subtle ways that other people treat and depict members of these groups. How are such normative evaluations different from attitudes? How do such subtle normative evaluations affect cognition and behaviour? What are the consequences of these norms? These are the fundamental questions I will seek to answer in this dissertation, but first why do we care about how others treat and depict members of social groups?

As human beings, we have two fundamental tasks. First, we need to understand what the world is like and how things work in order to effectively engage our environment. Based on their experience people will evaluate objects or social groups and decide whether they should approach or avoid the objects or social groups. In other words, people form attitudes in the process of exploring and learning about the world, and these attitudes will guide future behaviour. In this way, people will form preferences, beliefs or behaviour and figure out how the environment that surrounds them relates to the self.

Yet we also need to belong to social groups because human beings are social in nature. People are happier and healthier when they are connected to other people and are a part of groups (Cohen, 2004). To be included as a part of a group, we need to understand other people's beliefs and preferences (Miller & Anderson, 1979; Schachter, 1951; Williams, 1997, 2001). For

example, Sherif (1935) demonstrated that people's estimation of the distance of the movement of a light was influenced by other people's estimations. People tend to conform to such norms in order to increase a chance of acceptance and avoid social rejection. They also seek information on appropriate behaviour by observing other people's beliefs and behaviours so that they can fit in with others (Deutsch & Gerard, 1955).

Social psychologists have made the distinction between these two tasks using various terminologies such as agency vs. communion (Helgeson, 1994); need for cognition (Cacioppo & Petty, 1982) vs. need to belong (Baumeister & Leary, 1995); individual self vs. collective self (Turner et al.,1987); assimilation vs. differentiation (Brewer, 1991; Turner et al.,1987).

I argue that this distinction between individual preferences and group preference also affects processing at the implicit level. Research on automaticity has suggested when attitude objects are paired with one's evaluations, over time people develop associations between these two constructs. These attitudes can be activated outside of awareness and guide behaviour (Bargh et al., 1992; Fazio et al., 1986). In fact, research has shown that implicit attitudes reflect well-practiced associations. For example, early life experience with smoking and body weight predicted implicit attitudes towards these constructs whereas recent experience predicted explicit attitudes (Rudman, Phelan & Heppen, 2007). I argue that in a similar way that when attitude objects (including social groups) are repeatedly paired with other people's preferences or evaluations, over time people develop associations between these constructs. In this way, the association between attitude objects and other people's preferences or evaluations can be activated outside of awareness and guide behaviour. I call such associations implicit normative evaluations.

Implicit Normative Evaluations

Although to my knowledge no studies have yet examined implicit normative evaluations, some evidence consistent with my reasoning can be found in the literature. For example, people can adjust their own behaviour to stay in line with others without conscious efforts (Chartrand & Bargh, 1999). Specifically, when a confederate mimics a participant's behaviour (e.g., shaking a foot or rubbing a face), the participant felt closer to the confederate. However, the debriefing session revealed that participants were not aware of the confederate's behaviour, suggesting that social influences can occur outside of awareness. More direct evidence of how exposure to the environment will shape implicit normative evaluations can be found in a longitudinal study conducted by Dasgupta and Asgari (2004). They found that over time female students who were exposed to counter-stereotypical professors had significantly more positive automatic stereotypes about women. Although the researchers did not assess implicit normative evaluations directly, implicit stereotypes may reflect shared beliefs about women (i.e., most people value women). Through repeated exposure to the leadership roles that female professors play, female students in the women's college may develop positively shared beliefs about women outside of awareness.

Distinction between Implicit Attitudes vs. Implicit Normative Evaluations

I argue not only that implicit normative evaluations are important constructs, but also that they are distinct from implicit attitudes. People are knowledgeable of the culturally shared beliefs even if their attitudes are not consistent with normative evaluations. For example, in our society milk is considered healthy and important for nutrition and bone growth. By being exposed to the societal views towards milk, people may acquire positive implicit normative evaluations towards milk. People's preferences, however, may not be consistent with such normative evaluations. Through repeated aversive experience with milk, those who have lactose intolerance, for

example, may develop negative implicit attitudes towards milk. These implicit attitudes and normative evaluations may guide behaviour differently.

Measurement of Implicit Normative Evaluations

One purpose of current research is to develop a measure to assess implicit normative evaluations. The implicit association test (IAT: Greenwald, McGhee & Schwartz, 1998) is one of the most widely used measures to assess implicit constructs. The IAT measures the strength of association between target objects (e.g., flower or insect) and evaluative attributes (e.g., pleasant or unpleasant) by having participants classify stimulus items to category labels. In the critical blocks, participants categorize exemplars of evaluative attributes (e.g., sunshine, party, or disaster) and target items (e.g., photos of flowers or insects) simultaneously. If participants have faster response latencies when flowers and pleasant items share the same response than when flowers and unpleasant items share the same response, then it is inferred that they have positive implicit attitude towards flowers.

Recently, Olson and Fazio (2004) demonstrated that the traditional IAT is influenced by "extrapersonal associations." According to Olson and Fazio (2004), the traditional IAT measures not only personal associations, but also associations that people have acquired through socialization. To remove "extrapersonal associations" and assess "purer" implicit attitudes, Olson and Fazio (2004) modified two features of the traditional IAT. First, based on the finding that the IAT is driven by category labels, rather than exemplars (De Houwer, 2001), they changed the category labels for evaluative objects from "pleasant" and "unpleasant" to "I like" and "I don't like." Second, they removed the error feedback because the presence of the error message indicates that there is a "correct" answer. They found that the personalized version of

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the IAT was correlated with explicit measures more strongly and predicted behaviour better than the traditional IAT.

Although Olson and Fazio (2004) treated "extrapersonal associations" as error, I propose that "extrapersonal associations" may in part reflect implicit normative evaluations. There are some hints in the literature that these "extrapersonal associations" may reflect culturally shared beliefs or evaluations. For example, the more Korean-Americans and Japanese-Americans were exposed to their ethnic cultures, the stronger IAT effects were obtained. More specifically, Korean-Americans who had been exposed to Korean culture showed stronger association between Korean names and pleasant words than Japanese names and pleasant words. Similarly, Japanese-Americans who had been exposed to a Japanese culture showed stronger association between Japanese names and pleasant words than Korean names and pleasant words. People who have been exposed to their ethnic cultures observe how their in-group members and out-group members are treated and depicted in the media and are aware of culturally shared beliefs towards them. Therefore, these results suggest that the traditional IAT may be influenced by culturally shared associations.

If Olson and Fazio's argument (2004) is correct and the traditional IAT is influenced by "extrapersonal associations," I may be able to extract these cultural associations by modifying the IAT. To test this hypothesis, I created IATs that measure implicit normative evaluations by following Olson and Fazio's methodologies. More specifically, I changed the category labels from "pleasant" and "unpleasant" to "most people like" and "most people don't like."

In the first series of studies, I establish the convergent validity and discriminant validity of implicit attitudes and implicit normative evaluations. I examine the domain of flowers vs. insects (Study 1a) and apples vs. candy bars (Study 1b) because these domains are often used in

IAT research (e.g., Greenwald et al., 1998; Karpinski & Hilton, 2001; Olson & Fazio, 2004). In

Study 2, I examine how implicit normative evaluations among immigrants are affected by

exposure to a new culture. In Study 3, I experimentally manipulate implicit normative

evaluations in the lab and examine the impact of implicit normative evaluations on

discriminatory behaviour against people from the Middle East. Finally, in Study 4, I investigate

the influence of implicit normative evaluations on split second decisions.

CHAPTER 2: DEVELOPING AND VALIDATING IMPLICIT NORMATIVE

EVALUTION MEASURES

The purpose of the first series of the studies is to develop a measure of implicit normative evaluations and to begin to validate this measure by examining whether it predicts scores on the traditional IAT over and above implicit attitudes. When deciding on how to measure implicit normative evaluations I reasoned that the IAT could be adapted to assess this construct. If the traditional IAT measures both personal associations and "extrapersonal associations" as Olson and Fazio (2004) have argued, then an important source of "extrapersonal associations" from my perspective would be implicit normative evaluations. Such implicit normative evaluations would also be relatively easy to measure using the IAT. I would simply need to measure the association between people's conceptions of societal evaluations and specific objects of evaluation. For example, I could measure people's association between what they feel most people like or people approve of and a given object of evaluation (e.g., flowers or social groups).

As an initial test of whether such a measure of implicit normative evaluations was valid, it would need to predict scores on the traditional IAT above and beyond implicit attitudes. Olson and Fazio (2004) demonstrated that association between what "I like" and objects of evaluation (what we refer to as implicit attitudes) correlated with scores on the traditional IAT, but not perfectly. They argued that the traditional IAT represented both people's personal association (i.e., implicit attitudes) and their extrapersonal associations. If this reasoning is correct, and if implicit normative evaluations are an important source of extrapersonal associations as I have argued, then implicit attitudes and implicit normative evaluations should independently predict scores on the traditional IAT.

Study 1a

In Study 1a, participants completed the traditional IAT, implicit attitude measure and implicit normative evaluation measure in the domain of flower vs. insect. I hypothesized that implicit attitudes and normative evaluation measure will independently predict scores on the traditional IAT. Furthermore, because most people's attitudes and normative evaluations towards flowers vs. insects are relatively consistent in this domain, I expected that implicit attitudes and normative evaluations will be correlated with each other.

Method

Participants

Seventy-three undergraduate students (28 men and 45 women) participated in the experiment for credit towards their introductory psychology course. All participants were native speakers of English.

Materials

Explicit attitude measure. Participants were asked to indicate their attitudes towards flowers and insect using a 7-point Likert scale (1 = I dislike extremely, 7 = I like extremely). To make the explicit attitude measures comparable to the IAT, the scores for insects were subtracted from those of flowers. Higher values indicate more positive attitudes towards flowers than insects.

Explicit normative evaluation measures. Participants were asked to indicate normative evaluations towards flowers and insect using a 7-point Likert scale (1 = most people dislike extremely, 7 = most people like extremely). To make the explicit normative evaluation measures comparable to the IAT, scores for insects were again subtracted from those of flowers. Higher values indicate more positive normative evaluations towards flowers than insects.

The traditional IAT. Following the methodology of Greenwald et al. (1998), the IAT had

five blocks in total. I used five photos of flowers (carnation, daisy, lily, rose and tulip) and insects (ant, cockroach, maggot, fly and wasp, see a complete list for Appendix A) for stimulus items (Greenwald et al., 1998; Karpinski & Hilton, 2001). The first block was a practice trial for pleasant and unpleasant items, and participants classified pleasant (e.g., friend, party, gift) and unpleasant stimulus items (e.g., disaster, evil, death) to the category labels "pleasant" and "unpleasant." The second block and fourth block were practice trials for flower and insect items in which a participant categorized photos of flowers and insects to the labels "flower" and "insect" by pressing the response keys. The third block was an incompatible critical block in which flowers and unpleasant items share the same response key and insects and pleasant items share the same response key. The fifth block was a compatible critical block, in which flowers and pleasant items shared the same response key and insects and unpleasant items shared the same response key.

The implicit attitudes measure. The implicit attitudes measure (i.e., association of flowers vs. insects with what "I like") was the same as the traditional IAT except that participants were asked to distinguish between "things you might like or dislike" using the category labels "I like" and "I don't like" (Olson & Fazio, 2004).

The implicit normative evaluations measure. The implicit normative evaluations measure (i.e., association of flowers vs. insects with what most people like) was also similar to the traditional IAT except that participants were asked to distinguish between things most people like or dislike using the category labels "most people like" and "most people don't like." Specifically, I changed the instructions to say, "the following screens will ask you to distinguish between things most people like or dislike. The words most people like refer to what people in North America actually like, not what they should like."

The presence of error feedback suggests that there is a "correct" answer; however, there are more variations in individuals or normative preferences (for example, someone—perhaps Oscar the grouch—might actually like garbage). Thus, I removed error messages from all three types of the IATs. The three IATs were identical except for the category labels and instructions.

Procedure

Participants were invited to the lab in groups of up to four at a time. They practiced the traditional flower-insect IAT to become familiar with completing an IAT. Starting one week after the lab session, participants completed the traditional IAT, the implicit attitudes measure and implicit normative evaluation measure and corresponding explicit measures over the internet with each version spaced from 0 to 28 days apart[1] to reduce potential carryover effects. The average days between the measures are 7.93 days. The order of the measures was counterbalanced.

Results and Discussion

Following Jordan, Spencer, and Zanna (2005), response latencies that were slower than 3,000 ms were recorded as 3,000 ms and responses that were faster than 300 ms were recorded as 300 ms. The scores were obtained by subtracting the average response latencies of the fifth block from those of the third block[2]. Higher scores indicated relatively more positive evaluations of flowers than insects[3]. I found no differences for the number of days between IAT administrations, so I did not analyze for this variable. I analyzed data using a 3 (implicit measure: implicit attitudes measure, implicit norms measure, traditional IAT) x 2 (gender) mixed

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[1] One participant completed the measures on the same day; however, inclusion or exclusion of this participant did not influence the result. I included the participant to be conservative.
[2] There was no difference in error rates for the traditional IAT, implicit attitude measure and implicit norms measure (4.3%, 5.3%, 5.6 %, respectively, $F(2, 134) = .94$, *ns*).
[3] Because I did not counterbalance the order of blocks within the IAT, I do not interpret the results in terms of absolute zero.

model ANOVA, with implicit measure as a within-participants factor and gender as a between-participants factor. Neither the main effect for implicit measure nor the main effect for gender was significant, $Fs < 1$. However, there was a significant interaction between implicit measure and gender, $F_{(2, 132)} = 3.99$, $p = .02$. Follow up analyses indicated that there was a marginal gender difference on the implicit attitudes measure, ($M_{(males)} = 164.5$, $M_{(females)} = 229.4$; $F_{(1, 132)} = 3.34$, $p = .07$), but no gender differences on the traditional IAT ($M_{(males)} = 205.7$, $M_{(females)} = 174.7$) or the implicit norms measure ($M_{(males)} = 226.7$, $M_{(females)} = 187.9$), both $Fs < 1$. On the implicit attitudes measure, women showed a tendency to have a stronger personal preference for flowers than insects.

As illustrated in Table 1, implicit attitudes and implicit normative evaluations were moderately correlated with each other, $r = .42$, $p < .01$. Consistent with the past findings (e.g., Greenwald et al., 1998; Karpinski & Hilton, 2001), implicit and explicit attitudes were not correlated with each other. Similarly, implicit and explicit normative evaluations were not correlated with each other.

Table 1.

Correlation matrix for implicit and explicit attitudes and normative evaluations towards flowers vs. insects

	Implicit attitudes	Implicit norms	Explicit attitudes	Explicit Norms
Implicit attitudes	—			
Implicit norms	.42**	—		
Explicit attitudes	.09	-.06	—	
Explicit norms	.12	-.03	.06	—

Recall the hypothesis that if the traditional IAT is influenced by both personal association and extrapersonal association and if extrapersonal association reflect implicit normative evaluations, then implicit attitude and implicit normative evaluations will independently predict the scores on the traditional IAT. To test this hypothesis, I conducted a multiple regression analysis in which a measure of implicit attitudes and a measure of implicit normative evaluations were entered together as predictor variables. As illustrated in Figure 1, consistent with my hypothesis implicit attitudes and implicit normative evaluations both independently predicted scores on the traditional IAT, $\beta = .28$, $t_{(68)} = 2.36$ $p = .02$, $\beta = .22$, $t_{(68)} = 1.86$ $p = .07$, respectively, although the effect for implicit normative evaluations was marginally significant.

Figure 1. The relations of implicit attitudes and implicit normative evaluations to the traditional IAT in the domain of flowers vs. insects
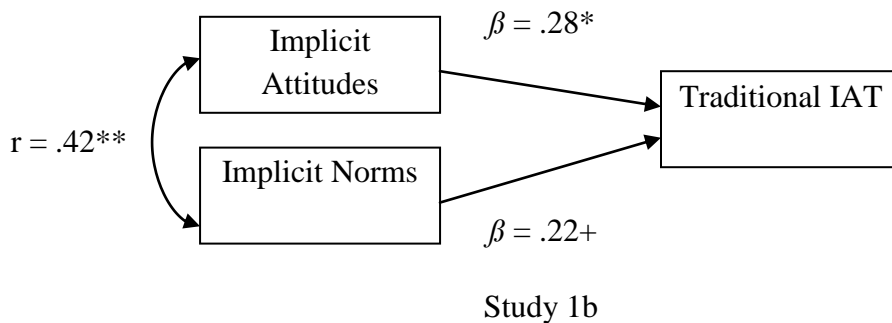
Study 1b

The purpose of Study 1b is to replicate the finding of Study 1a in a different domain. I chose the domain of apples vs. candy bars because previous IAT research was conducted in this domain (e.g., Karpinski & Hilton, 2001; Olson & Fazio, 2004). Olson and Fazio (2004) found that people had more positive evaluations towards apples compared to candy bars on the traditional IAT than on a measure of implicit attitude. They argue that apples are portrayed more positively than candy bars in our society, whereas there is more variability in individual preference for apples vs. candy bars. Based on these findings, I hypothesized that implicit

attitudes and implicit normative evaluations will be loosely associated with each other in this

domain.

<center>*Method*</center>

Participants

The same 73 participants who completed Study 1a completed Study 1b.

Materials

Explicit attitudes measure. I used the same Likert scale to assess participants' attitudes

towards apples and candy bars (1 = I dislike extremely, 7 = I like extremely). To make the

explicit attitude measures comparable to the IAT, an attitude measure was created by subtracting

the score for candy bars from that of apples. Higher values indicate more positive attitudes

towards apples than candy bars.

Implicit measures. I used the similar IATs in this study to those used in the Study 1a. The

only changes were in stimulus items and category labels. More specifically, participants

categorized photos of apples and candy bars with category labels "apple" and "candy bar,"

instead of categorizing photos of flowers and insects with category labels "flower" and "insect."

The IAT was coded so that higher scores indicated more positive evaluations towards apples than

candy bars.

Procedure

The procedure of Study 1b was the same as in Study 1a, except for the change in the

materials described above.

<center>*Results and Discussion*</center>

I scored the IATs using the same procedures described in Study 1a. I found no

differences for the number of days between IAT administrations so I did not analyze for this

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variable. I conducted a 3 (implicit measure: implicit attitudes measure, implicit norms measure, traditional IAT) x 2 (gender) ANOVA, with repeated measures on the first factor. No significant main effects for implicit measure or gender and no interaction between implicit measure and gender emerged, $Fs < 1$ ($M = -21.7$, $SD = 130.1$ for the implicit attitudes measure, $M = -23.1$, $SD = 133.3$ for the implicit norms measure, $M = -27.0$, $SD = 179.7$ for the traditional IAT). As can be see in Table 2, implicit attitudes and implicit normative evaluations were not correlated in this study, $r = .06$ ns. Consistent with Study 1a, implicit and explicit attitudes and normative evaluations were not correlated with each other. Explicit attitudes and normative evaluation were also correlated with each other, suggesting that people's attitudes and perceived norms are consistent at the explicit level. Surprisingly, implicit normative evaluations and explicit attitudes were also correlated with each other–a finding we have not observed in any of our other data.

Table 2.

Correlation matrix for implicit and explicit attitudes and normative evaluations towards apples vs. candy bars

	Implicit attitudes	Implicit norms	Explicit attitudes	Explicit norms
Implicit attitudes	—			
Implicit norms	.06	—		
Explicit attitudes	.18	.43**	—	
Explicit norms	.20	.17	.49**	—

As shown in Figure 2, multiple regression analysis provided stronger evidence of the unique influence of implicit attitudes and normative evaluations on the traditional IAT. Both implicit attitudes and implicit normative evaluations independently predicted scores on the traditional IAT, $ß = .42$, $t_{(65)} = 3.81$, $p < .01$, $ß = .22$, $t_{(65)} = 1.99$ $p = .05$, respectively. These

results provided evidence of discriminant validity between implicit normative evaluations and

implicit attitudes. [4]

Figure 2. The relations of implicit attitudes and implicit normative evaluations to the traditional

IAT in the domain of apples vs. candy bars
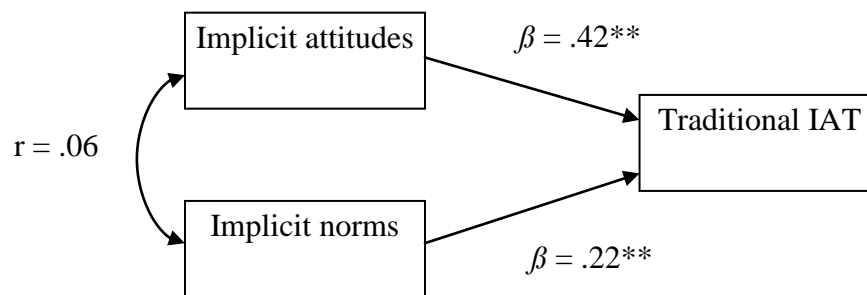
Replicating Study 1a, Study 1b provided evidence that the traditional IAT is

independently predicted by both implicit attitudes and implicit normative evaluations. Moreover,

in Study 1a implicit attitudes and implicit normative evaluations toward flowers and insects were

moderately correlated. In contrast, in Study 1b implicit attitudes and implicit normative

evaluations towards apples vs. candy bars were not correlated with each other, suggesting that

people's implicit attitudes and implicit normative evaluations are not necessarily consistent with

each other in this domain. Taken together, Study 1a and Study 1b demonstrated that implicit

attitudes and implicit normative evaluations appeared to be unique constructs in that they

uniquely predict scores on a traditional IAT.

The finding that implicit normative evaluations and implicit attitudes independently

influence scores on the traditional IAT was replicated in another line of research (Bangard &

Fein, 2008). After they learned of our studies, they attempted to replicate the main results with

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[4] The implicit attitudes towards flowers and insects were not correlated with implicit attitudes towards apples and candy bars ($r = -.09$, ns). Similarly, implicit norms towards flowers and insects were not correlated with implicit norms towards apples and candy bars ($r = .13$, ns). These results provided further evidence of discriminant validity.

implicit attitudes and normative evaluations towards African Americans. They examined students' implicit attitudes and normative evaluations toward African-Americans. Among undergraduate students from the introductory psychology course at Williams College, they replicated the findings in Study 1a and 1b—both implicit attitudes and normative evaluations independently predicted scores on the traditional IAT.

Interestingly, among students who are involved in a campus group to promote diversity, a different effect was obtained. Specifically, among activists, implicit normative evaluations and implicit attitudes interacted to predict scores on the traditional IAT. If they had developed negative implicit normative evaluations, these normative evaluations were associated with high level of implicit prejudice as measured by the traditional IAT even if they did not have negative implicit attitudes. These activists showed the same pattern of responses that Arkes and Tetlock (2004) speculated that Jesse Jackson might show: they displayed implicit prejudice on the traditional IAT even though they had positive implicit attitudes about African-Americans. This result suggests that to the extent people are immersed in culture that views racial minorities in a negative light, implicit prejudice will appear on the traditional IAT regardless of the level of their implicit attitudes and that whether they have negative or positive implicit normative evaluations will determine whether this pattern is observed.

CHAPTER 3: EXAMINING IMPACT OF IMPLICIT NORMATIVE EVALUATIONS

ON STEREOTYPING AND PREJUDICE

Thus far, the data of the first series of studies provided strong evidence for convergent and discriminant validity of implicit normative evaluations measure. In the remaining studies, I will examine how implicit normative evaluations towards social groups will be shaped and how these evaluations will influence discriminatory behaviour.

Study 2

In Study 2, I examined how exposure to culturally shared beliefs will shape implicit normative evaluations towards social groups. Some findings suggest that the exposure to culturally shared beliefs (i.e., normative evaluations) may affect behaviour outside of awareness. For example, Ferguson and Hassin (2007) found that the effect of American cues on aggression was moderated by the exposure to political news media. Specifically, American cues increased aggressive behaviour for those who have been exposed to the American political news media. For those who do not regularly follow the news, the effect did not emerge. Their research suggests that those who have watched the news media frequently have been exposed to descriptive norms about the United States being aggressive (e.g., the wars in Iraq and Afghanistan) and through the media exposure, people may develop implicit normative evaluations and these norms may affect behaviour outside of awareness.

In this study, I examined how people from different culture will change implicit normative evaluations over time. People from different cultures are exposed to different cultural values or social expectations (Triandis & Suh, 2002). When these people come to a new country, they are exposed to a new culture and new norms. How does their experience in this new culture shape their implicit normative evaluations? If the arguments I have made about implicit

normative evaluations are correct, then exposure to how groups are treated and depicted in the new culture should shape people's implicit normative evaluations over time. To test this prediction in the present study I investigate the relation between exposure to Canadian culture as measured by time spent in Canada and implicit normative evaluations among Asian-Canadians who have immigrated to Canada. I expect that exposure to a Canadian culture will be a significant predictor of implicit normative evaluations.

I expect that the length of time spent in Canada will be a weaker predictor of implicit attitudes than implicit normative evaluations. Instead, implicit attitudes will be more strongly predicted by the identification with Canadian culture. As I have argued implicit attitudes form largely from experience with specific attitude objects (i.e., people in this instance), thus implicit attitudes may largely be influenced by identification with the new culture to which people are immigrating. If people are highly identified with the culture, they may actively try to take on the views commonly held in that culture. In this way, Asian-Canadians who highly identify with being Canadian may actively try to take on the negative views of Canadian society toward social groups and therefore be more likely to develop negative implicit attitudes. However, implicit attitudes will be less affected by exposure to Canadian culture per se or the length of time that people have lived in Canadian society than implicit normative evaluations. Similarly, I do not propose that explicit attitudes form simply from exposure to the culture either. Rather, I have argued that explicit normative evaluations form through conscious reflection on how the objects of evaluation (i.e., people in this instance) are treated. Thus, explicit normative evaluations could form very quickly or slowly depending on this conscious reflection.

Norms about the Elderly in Asia

According to Sung (2001), traditional East Asian cultures have been influenced by Confucian values, which emphasize obedience and respect for parents and older people. Therefore, in East Asian cultures people tend to value older people because they tend to associate older people with wisdom or maturity. In contrast, in Western cultures, people tend to associate older people with senility or weakness, and young people are more valued than older people (Streib, 1987). If these cultural values affect people's implicit attitudes and normative evaluations as I predict, then people from East Asia will have more positive implicit attitudes and normative evaluations towards older people than will people from North America. I also hypothesized that Asian-Canadians who have been to Canada for a long time will have more negative implicit normative evaluations towards older people than Asian-Canadians who have been to Canada for a short time. However, I do not expect that the length of time spent in Canada will predict Asian-Canadian's implicit attitudes towards older people. Rather I expect that implicit attitudes will be predicted by Asian-Canadian's identification with Canadian culture.

In this study, I operationalize implicit normative evaluations about older people in terms of beliefs or values because cross-cultural difference may be more pronounced in beliefs or values of older people than preferences. In fact, research found that in Western cultures, older people are liked but are not valued (Fiske et al., 2002). Thus, to capture value of older people, rather than preferences, I changed two features of the IAT. First, I changed the category labels from "most people like" and "most people don't like" to "most people believe in" and "most people don't believe in." Second, I used ideological stimulus items that people believe in or don't believe in such as "freedom" or "oppression."

Method

 Participants

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Eighty-five European-Canadian (23 men and 62 women) and 151 Asian-Canadian (51 from Hong Kong, 50 from China, 7 from Taiwan, 2 from South Korea, 2 from Malaysia, 1 from North Korea, 1 from Vietnam and 37 did not provide information on their country of origin) (56 men and 95 women) undergraduate students from the University of Waterloo participated in this study for course credit or an $8.00 payment.

Materials

Acculturation measures. To measure the level of acculturation for Asian-Canadian participants, I asked them to indicate the strength of identification with Asian culture and Canadian culture on an 11-point Likert scale ranging from 0 (not at all) to 10 (very much)[5]. I also assessed the length of time they had spent in Canada[6].

Explicit attitudes towards younger and older people. Participants were asked to indicate their attitudes towards younger and older people on 7-point semantic differential scales: favourable – unfavourable, positive – negative, like – dislike, and desirable – undesirable.

Explicit normative evaluations about younger and older people. To measure explicit normative evaluations towards younger and older people, I asked participants to indicate most people's overall opinions or evaluations of younger people or older people on the same semantic differential scales as the attitude measures.

Implicit attitudes towards younger and older people. I used the same implicit attitudes measure as in Study 1 except for the category labels and stimulus items. To capture participants'

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[5] Three Asian participants indicated 7 out of 11 when rating how strongly they identified with Asian culture; however, inclusion or exclusion of these three participants did not influence the results. I reported results including these three participants to be conservative.

[6] Because I used a mass-testing questionnaire that measured the length of time in country of origin, I measured the length of time spent in Canada based on the time spent in country of origin. Most people came to Canada directly from their birth country; therefore the length of time spent in Canada can be estimated by subtracting the length of time spent in country of origin from participants' ages.

implicit attitudes towards younger and older people, I used the implicit attitudes measure with category labels, "I believe in" and "I don't believe in." I chose ideological exemplars, such as sadness, hate, dishonesty, oppression, injustice, happiness, love, honesty, freedom, and justice. The other category labels were "young" and "old" and participants were asked to categorize photos of younger men and women and older men and women. All the pictures were of European-Canadians.

Implicit normative evaluations about younger and older people. The implicit normative evaluations measure was the same as the implicit attitudes measure except that the category labels "I believe in" and "I don't believe in" were replaced with the category labels "most people believe in," and "most people don't believe in."

Procedure

Participants completed the implicit attitudes measure and implicit normative evaluations measure and corresponding explicit measures over the internet. Each IAT was separated from three days to 26 days apart (with an average of 6.39 days apart) to reduce potential carryover effects. The order of the set of measures was counterbalanced.

<div align="center">*Results and Discussion*</div>

Acculturation measures. The mean length of time that Asian-Canadians spent in Canada was 8.76 years ($SD = 5.16$). In the following analyses the length of time in Canada was log transformed (Singer & Willett, 2003) because differences in time spent in Canada were more likely to be potent when time in Canada was relatively short than when it was relatively long (i.e., the difference between 1 year vs. 2 years in Canada would be more pronounced than the difference between 15 years and 16 years). I also measured identification with Canadian culture and identification with Asian culture. The mean strength of identification with Canadian culture

was 6.97 (*SD* = 2.01), whereas the mean identification with Asian culture was 8.37 (*SD* = 1.76). The length of time spent in Canada and Canadian identity were modestly correlated with each other, *r* = .19, *p* < .05.

Is there any cultural difference in implicit attitudes and normative evaluations? I used the same algorithm to calculate IAT scores as in Study 1. Higher scores on the both the implicit normative evaluations and implicit attitudes indicate more positive implicit normative evaluations and attitudes towards older people. Implicit attitudes and normative evaluations were moderately correlated with each other (*r* = .24, *p* < .001).

I examined cross-cultural difference in implicit attitudes and normative evaluations by conducting a 2 (ethnicity: European-Canadians vs. Asian-Canadians) x 2(implicit measure: implicit attitudes vs. implicit normative evaluations) mixed model ANOVA. There was no significant difference between European-Canadians and Asian-Canadians (*F* < 1, *p* > .22)[7].

Acculturation and implicit normative evaluations. Recall my hypothesis that the exposure to cultural norms will shape implicit normative evaluations over time.[8] To test this reasoning, I conducted a regression analysis in which log-transformed length of time spent in Canada predicted implicit normative evaluations after controlling for identification with Canadian culture, identification with Asian culture, explicit attitudes, explicit normative evaluations, and implicit attitudes toward older people. I found that implicit normative evaluations were predicted by log-transformed length of time spent in Canada, *ß* = -.20, $t_{(98)}$ = -2.13, *p* < .05 but were not predicted by identification with Canadian culture. Asian-Canadians who had spent more time in

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[7] There were no gender effects in any analyses. Therefore, I did not include gender in any of the analyses reported in Study 2.
[8] If time spent in Canada were correlated with participants' age, then it would be a potential alternative explanation for the results. However, these two variables were not correlated with each other (*r* = -.13 *ns*).

Canada had more negative implicit normative evaluations than Asian Canadians who had recently come to Canada (see Figure 3). This result suggested that the longer Asian-Canadian spent in Canada, the more negative their implicit normative evaluations towards older people became. In addition, implicit attitudes and explicit attitudes also predicted implicit normative evaluations, $\beta = .32$, $t_{(98)} = 3.43$, $p = .001$, and $\beta = .20$, $t_{(98)} = 1.86$, $p = .07$ respectively, all other βs < .05, ts < 1.

Figure 3. The relations of length of time spent in Canada and strength of identification with Canadian culture to implicit cultural normative evaluations about older people
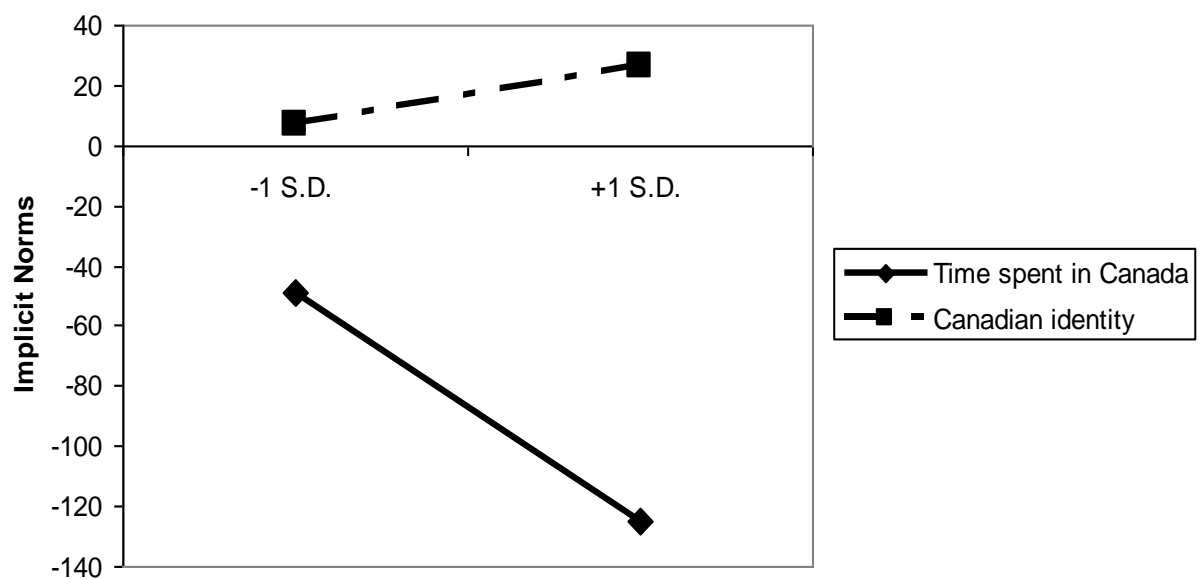
Acculturation and implicit attitudes. To test the hypothesis that time spent in Canada would not influence implicit attitudes, I conducted a regression analysis in which log-transformed length of time spent in Canada predicted implicit attitudes, controlling for identification with Canadian culture, identification with Asian culture, and explicit attitudes, explicit normative evaluations, and implicit normative evaluations towards older people. Consistent with my hypothesis, log transformed length of time in Canada was not a significant

predictor of implicit attitudes $\beta = -.03$, $t < 1$, suggesting that exposure to Canadian culture did not affect implicit attitudes.

I expected identification with Canadian culture to be a predictor of implicit attitudes. Consistent with the hypothesis, implicit attitudes were marginally predicted by identification with Canadian culture, $\beta = -.17$, $t_{(98)} = -1.80$, $p = .08$ and implicit normative evaluations, $\beta = .34$, $t_{(98)} = 3.43$, $p = .001$. Thus, as can be seen in Figure 4, implicit attitudes tend to be predicted by identification with Canadian culture, but are not predicted by the length of time spent in Canada. Asian-Canadian immigrants who were more strongly identified with Canadian culture tended to have implicit attitudes that were more negative toward the elderly than Asian-Canadian immigrants who were less identified with Canadian culture.

Figure 4. The relations of strength of identification with Canadian culture and length of time in Canada to implicit attitudes towards older people
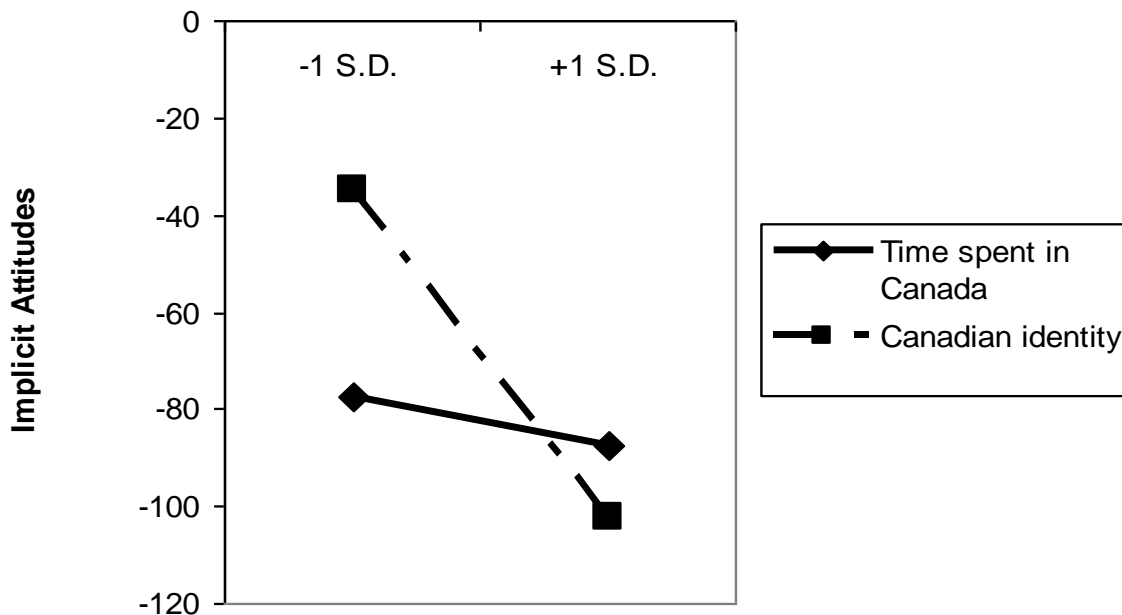
Does the length of time spent in Canada predict explicit normative evaluations?

I combined the questions about explicit attitudes toward older people (Cronbach's alpha = .88 for younger people, Cronbach's alpha = .90 for older people), and explicit normative evaluations (Cronbach's alpha = .80 for younger people, Cronbach's alpha = .89 for older people) each into a single index. Then, I subtracted the combined measure for younger people from that of older people—as was done in the IAT measures of these constructs; therefore, higher values indicate more positive evaluations towards older people than towards younger people.

To test whether length of time spent in Canada will predict explicit normative evaluations, I conducted a regression analysis in which log-transformed length of time in Canada predicted explicit normative evaluations. Consistent with the hypothesis, I found that log-transformed length of time in Canada did not predict explicit normative evaluations, $\beta = .15$, $t_{(109)} = 1.60$, *ns.*

Study 2 provided further evidence of discriminant validity between implicit attitudes and normative evaluations. Implicit normative evaluations were predicted by the length of time spent in Canada, whereas implicit attitudes were not. In contrast, implicit attitudes tended to be predicted by identification with Canadian culture, whereas implicit normative evaluations were not. These results suggest that although implicit attitudes and implicit normative evaluations are related, they have different antecedents and are different constructs.

Furthermore, the data suggested that exposure to cultural norms shaped implicit normative evaluations. The longer Asian Canadians stayed in Canada, the more negative their implicit normative evaluations towards older people became. However, because of the nature of a correlation study, I cannot establish a causal relation. To overcome this limitation, I conducted

an experiment and examined how differences in other people's evaluations influenced implicit normative evaluations and consequently discriminatory behaviour.

Study 3

Study 3 examines how exposure to other people's evaluations of a social group will affect implicit normative evaluations and behaviour. In this study I examine implicit normative evaluations towards people from the Middle East because prejudice and discrimination against this group has been a serious issue particularly since September 11, 2001 (e.g., Oswald, 2005). I subtly manipulated other people's evaluation towards people from the Middle East by changing the audience's reactions towards racist jokes targeting people from the Middle East. More specifically, when the audience laughs at the racist jokes, that will convey more negative local norms towards people from the Middle East than when the audience remains silent.

I hypothesized that implicit normative evaluations will be influenced by the audiences' reactions towards the racist jokes. As I have argued, implicit normative evaluations are expected to be formed by being exposed to other people's beliefs and preferences. When these beliefs and preferences are expressed in subtle ways, people may develop associations between what most people like and dislike and people from the Middle East even when they are not consciously aware of local norms. Therefore, I hypothesized that when the audience laughs at the racist jokes targeting people from the Middle East, people will have negative implicit normative evaluations towards them than when the audience remains silent.

I also hypothesized that the audience's reactions towards the racist jokes will influence discrimination. Past research has demonstrated that people's opinions or evaluations tend to be influenced by other people's reactions. For example, people's evaluations of a presidential debate performance were influenced by the audience's reaction. When the audience responded to

the speech with cheers and laughter, participants evaluated the speech more favourably than when the audience's reactions were removed (Fein, Goethals & Kugler, 2007). Based on these findings, I hypothesized that when the audience laughs at the racist jokes, people will be more likely to engage in discriminatory behaviour than when the audience remains silent.

Furthermore, I hypothesized the influence of the audience reactions on discriminatory behaviour will occur through implicit normative evaluations. Theorizing on modern racism argues that prejudice and discrimination tends to be expressed in more subtle and unconscious ways (e.g., Dovidio & Gaertner, 2000) and tends to be influenced by the salience of social norms (Crandall & Eshleman, 2003). People tend to express negative attitudes towards racial minorities when other people endorse prejudicial attitudes or when they can justify their behaviour. Therefore, I predicted that people's discriminatory behaviour will be influenced by the local norms even when they are not consciously aware of other people's endorsement of prejudicial attitudes.

Method

Participants

Seventy nine (33 men and 45 women, one person did not indicate gender) European-Canadian undergraduate students from the University of Waterloo participated in the study in exchange for a course credit or an $8.00 payment.

Materials

Explicit normative evaluations towards people from the Middle East. Participants were asked to indicate how most people feel about typical people from the Middle East using an evaluative thermometer (100 = extremely favourable, 0 = extremely unfavourable).

Explicit attitudes towards people from the Middle East. To measure explicit attitudes towards, I asked participants to indicate how they feel about typical people from the Middle East using the same evaluative thermometer (100 = extremely favourable, 0 = extremely unfavourable). To conceal the purpose of the study, the explicit normative evaluations and attitudes measures about people from the Middle East were embedded with measures for other social groups such as union members, African-Canadians, English-Canadians and gays and lesbians.

Implicit normative evaluation measure. I used the same implicit normative evaluations measure that I used in Study 1 except for the category labels and stimulus items. I used the categories, "most people like" / "most people don't like" and "Middle Easterner" and "object." I used the category label "object" because the IAT measures relative preference towards one concept over the other. Using the category label "object" will make it clear whether participants have positive evaluations towards Middle Easterner or not (rather than positive evaluations towards North Americans). Participants were asked to categorize photos of people from the Middle East and photos of neutral objects (e.g., desk, chair, fork, and stapler).

Implicit attitudes measure. The implicit attitudes measure was the same as the implicit normative evaluations measure except that the category labels "most people like" and "most people don't like" were replaced with "I like" and "I don't like."

Procedures

A half of the participants completed the implicit attitude measure and the other half completed implicit normative evaluations measure and corresponding explicit measures over the internet approximately four days before the lab session. Which measure to be completed was determined by random assignment. In the lab session, participants viewed a series of stand-up

routine comedians, and one of the comedians included a racist joke about people from the Middle East. I manipulated the local norms by modifying the audience's reactions towards the joke. In the no laughter condition, the audience's laughter was removed, which conveyed positive normative evaluations towards people from the Middle East (i.e., most people like people from the Middle East). In the laughter condition, the audience's original laughter was retained, which conveyed negative norms towards people from the Middle East (i.e., most people don't like people from the Middle East). Immediately after watching the comedians, participants completed the same implicit attitudes or normative evaluations measure as the one they completed before coming to the lab.

After participants completed the task, a Caucasian experimenter who was blind to the condition told them that the study was over. However, the experimenter asked participants if they could fill out a survey from the Federation of Students (FEDS) (Song Hing, Li & Zanna, 2002). The experimenter explained to the participants that the FEDS had to cut down budget by 20 % (or CA $1,000) for various student organizations and wanted to input from students about the budget. One of the student organizations included the Muslim Student Association (MSA) and the proportion of money that participants allocated to MSA is a dependent variable (see the budget reduction materials in Appendix C). After completing the survey, participants were probed for suspicion and fully debriefed.

Results and Discussion

The influence of laughter on implicit attitudes and normative evaluations. I used the same algorithm to calculate the implicit measures as described in the previous studies. Higher values indicate more positive evaluation towards people from the Middle East. I expected that the audience's reaction to the racist jokes would influence implicit normative evaluations, but not

implicit attitudes. To test this hypothesis, I conducted a 2 (condition: laughter vs. no laughter) x 2 (implicit measure: implicit attitudes vs. implicit normative evaluations) x 2 (gender: men vs. women) between-participant ANOVA to examine the effect of condition on implicit attitudes and normative evaluations to test this hypothesis.[9] There were no significant main effects, but there were two significant interactions. First, gender interacted with the implicit measure ($F_{(1,71)}$ = 3.93, p = .05) such that men had more positive implicit normative evaluations than women, ($M_{(men)}$ = 40.13, SD = 105.82, $M_{(women)}$ = -19.86, SD = 145.84, $F_{(1, 71)}$ = 6.87, $p < .05$) but there were no gender differences on implicit attitudes ($M_{(men)}$ = -34.45 SD = 127.64, $M_{(women)}$ = -6.31, SD = 92.88, ns). It thus seems that women may have developed implicit normative evaluations about people from the Middle East that more strongly represent the negative depiction of these people in society.

Second, and more relevant for my hypotheses, there was a significant interaction between condition and implicit measure $F_{(1, 71)}$ = 5.33, $p < .05$. As depicted in Figure 5, implicit normative evaluations were influenced by the audience's reactions to the racist jokes, $F_{(1, 71)}$ = 6.63, $p < .05$, whereas implicit attitudes were not, $F_{(1, 71)} < 1$, $p > .34$. Those who were exposed to the audience who laughed at the racist jokes had significantly more negative normative evaluations towards people from the Middle East than those who were exposed to the audience who remained quiet.

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[9] I excluded two outliers for this analysis.

Figure 5. Implicit attitudes vs. normative evaluations towards people from the Middle East as a function of the condition

The influence of laughter on discriminatory behaviour. I examined discriminatory behaviour by measuring how much money participants gave to the Muslim Student Association (MSA) on campus. I expected that when the audience laughed at the racist jokes participants would give less money to this group than when the audience remained silent after the joke was told. To test this hypothesis, I conducted a 2 (condition: laughter vs. no laughter) x 2 (implicit measure: implicit attitudes vs. implicit normative evaluations) X 2 (gender: men vs. women) between-participant ANOVA to examine this hypothesis[10].The only significant effect was a main effect for condition $F_{(1, 71)} = 4.21$, $p < .05$. Consistent with my hypothesis, participants in the laughter condition allocated significantly less money to MSA than those in the no laughter

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[10] I excluded two people who did not complete the budget allocation measure by not giving any money to the MSA and other groups as well).

condition, $M = 380$, $SD = 120$ (31 % reduction); $M = 431.2$, $SD = 80$ (25 % reduction), respectively.

Figure 6. The amount of money that was allocated to the Muslim Student Association as a function of the condition

Does the laughter condition affect discriminatory behaviour through implicit normative evaluations? To test whether the effect of the laughter condition on discriminatory behaviour was accounted for by implicit normative evaluations towards people from the Middle East, I used bootstrapping techniques developed by Preacher and Hayes (2004). First, I entered condition into a regression equation to predict implicit normative evaluations towards people from the Middle East, and the results indicated that the condition predicted implicit normative evaluations, such that those who were in the laughter condition had significantly more negative implicit normative evaluations towards people from the Middle East, $\beta = .30$, $t_{(46)} = 2.13$, $p < .05$. Next, when condition and implicit norm were simultaneously entered into the regression equation to predict the budget allocated to MSA, condition was no longer significant, $t_{(45)} = .32$,

$p = .75$. Consistent with my hypothesis, those who were exposed to the audience who laughed at the racist jokes had significantly more negative implicit normative evaluations towards them, which predicted greater reduction of the budget for the MSA, $\beta = .32$, $t_{(45)} = 2.11$, $p < .05$. The strength of the indirect effect is estimated by using a confidence interval (CI). I set a 95 % CI for this analysis, and if the upper and lower limits of the CI do not include zero, then the result indicates that the indirect effect is significantly different from zero at $p < .05$. Based on 10000 bootstrap resamples, I found that this indirect effect was significant $CI = .003$ to $.096$, $p < .05$ (see Figure 7).

Figure 7. The audience reaction affecting discriminatory behaviour through implicit normative evaluation
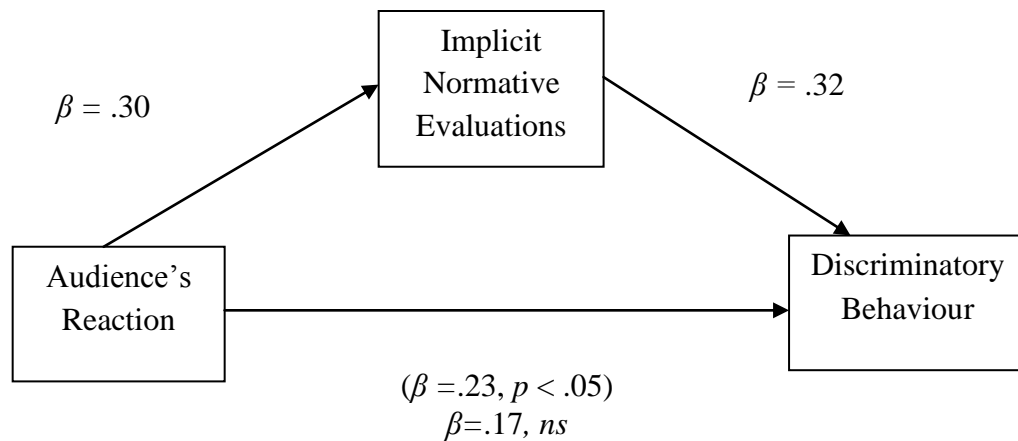
Consistent with my hypothesis, people who were exposed to the audience who laughed at the racist jokes had more negative implicit normative evaluations towards people from the Middle East than those who were exposed to the audience who remained silent. I also found that people were more likely to engage in discriminatory behaviour when the audience supported racist jokes than when the audience did not. Moreover, this effect was accounted for by implicit

normative evaluations. The more negative implicit normative evaluations towards people from the Middle East were, the more people engaged in discriminatory behaviour. Furthermore, because implicit attitudes were not influenced by the local norms, I did not conduct the same meditation analysis for implicit attitudes. Nevertheless, implicit attitudes did not predict discriminatory behaviour ($\beta = -.09$, $t_{(26)} = .46$, *ns*).

In this study, I was able to manipulate implicit normative evaluations by changing subtle cues of other people's evaluations towards people from the Middle East. These subtle cues had an impact on discriminatory behaviour even when people were not consciously aware of what most people like or dislike. Moreover, implicit attitudes were not affected by the audience's reactions or predicted discriminatory behaviour, suggesting that implicit attitudes and normative evaluations have different antecedents and consequences. The salience of local norms did not change implicit attitudes because implicit attitudes are presumably developed through direct interaction with social groups, rather than just being exposed to other people's subtle expression of their preference. These findings provided further discriminant validity of implicit attitudes and normative evaluations.

<center>Study 4</center>

Study 4 examines the issue of violence against Black people because in this domain people's personal experience with Black people and normative evaluations towards them tend to diverge. People are likely to encounter Black people in mundane contexts such as at workplace, school or grocery stores. Given that implicit attitudes are well learned personal evaluations that people have developed through repeated experience (Rudman, Phelan & Heppen, 2007), one can imagine that implicit attitudes towards Black people will be related to everyday behaviour. Indeed, research has shown that implicit attitudes towards African Americans predicted

<center>34</center>

nonverbal behaviour in everyday contexts such as an interracial interaction (Dovidio, Kawakami, Johnson, Johnson & Howard, 1997).

In contrast, I argue that implicit normative evaluations are shaped through repeated exposure to portrayals of Black people in the media or how other people treat them. In North American society, Black people are depicted in the context of physical fights or shooting in the media reinforcing dangerous or violent images of Black people. In addition, people may observe how other people are cautious about Black people or subtly avoid them (Chen & Bargh, 1999). Therefore, implicit normative evaluations towards Black people may reflect societal views of Black people being more dangerous or violent than they really are.

If you encounter a Black person and have to figure out quickly whether the person is armed or not, what factors will influence your decision? In 1999, Amadou Diallo, an African immigrant was shot by four police officers. They ordered him to freeze; however, he reached into his pocket. They fired 41 shots and 19 of them hit and killed him. What he was trying to reach turned out to be a wallet. Why did police officers think that he possessed a gun? Would they have decided to shoot him if he had been White? This incident spurred social psychologists to examine such shooting scientifically. More specifically, Correll and his colleagues (2002) developed a computer simulation in which participants "shoot" a target who is holding a gun and do not "shoot" a target who is holding a harmless object (e.g., cell phone). They found that when a target did not have a gun participants were slower to not shoot an African American than a European American. When a target had a gun participants were faster to shoot an African American than a European American. They examined the accuracy of responses by using a shorter response window (630 ms) and found that when participants had to make decisions quickly they were more likely to shoot an African American than a European American.

Similarly, participants were more likely to fail to shoot a European American with a gun than an African American. Correll and his colleagues labeled this bias the shooter bias.

Study 4 examines whether implicit normative evaluations will be related to the shooter bias. Previous studies found that implicit and explicit attitudes were not related to the shooter bias (Correll et al, 2002), suggesting that the shooter bias is not caused by negative attitudes towards African Americans. Although why implicit attitudes did not predict the shooter bias has not been established, I can speculate why this is the case based on my reasoning of how implicit attitudes are shaped. I argue that implicit attitudes towards Black people are shaped through repeated interaction with them. It seems unlikely that many people have repeatedly encountered Black people when the primary decision has been whether or not to act violently toward them. Rather, most social interactions are likely to be much more mundane. Therefore, implicit attitudes are not expected to be related to the shooter bias. In contrast, by living in North American society people are exposed to numerous media depiction of Black people being involved in shooting; therefore, implicit normative evaluations are expected to be formed through exposure to media depictions of violent aspects of Black people.

These implicit normative evaluations towards Black people may not be consistent with implicit attitudes. Even if one has pleasant interactions with African Americans and has positive implicit attitudes towards them, it is still quite possible that they will be exposed to negative treatment and depictions of Black people, and this exposure through implicit normative evaluations may well affect the shooter bias. In other words, to the extent that people have implicit normative evaluations of Black people being dangerous or violent, these beliefs may affect their split second decision of whether an Black target possesses a gun or not. Based on this

reasoning, I hypothesized that the shooter bias would be related to implicit normative evaluations but not implicit attitudes.

I also hypothesized that the shooter bias will not be related to explicit normative evaluations. Research on automaticity has shown that automatic processes are efficient and can operate when cognitive resources are limited. In contrast, deliberative processes require much more cognitive resources (Bargh et al., 1992). Therefore, when people make a judgment under time pressure, automatic processes will predict behaviour better than deliberative processes.

Method

Participants

Sixty three undergraduate students (23 men and 40 women) participated in the study in exchange for $8.00. The ethnic breakdown of the participants was 40 European-Canadian, 19 Asian-Canadian (14 from East Asia and 5 from South Asia), 2 people from the Middle East and 2 participants that did not indicate their ethnicity.

Materials

Explicit normative evaluations towards African Canadians. Participants were asked to indicate most people's overall impressions about African Canadians using an evaluative thermometer from 0 (negative) to 100 (positive). The evaluations towards African Canadians were embedded with other social groups (e.g., Asians, French Canadians etc…) to disguise the purpose of the study.

Perceived Discrimination in Merit Assessment Scale (Son Hing, Bobocel, & Zanna, 2002). This scale assessed participants' perceived discrimination against visible minorities in the workplace. An example item from this scale is "Historically, subtle personal biases of job interviewers disadvantaged visible minority job applicants in the assessment of their

qualifications." The item responses ranged from 1 (*strongly disagree*) to 7 (*strongly agree*) (Cronbach's α = .93) (see the actual scale in Appendix B).

Explicit attitudes towards African Canadians. I used the same evaluative thermometer to assess explicit attitudes towards African Canadians. Participants were asked to indicate their overall impressions of African Canadians using the number 0 (negative) to 100 (positive).

Old-Fashioned Racism Scale (Brigham, 1972). This scale assesses participants' explicit attitudes towards African Canadians. The example of the item is "It is likely that blacks will bring violence to neighbourhoods when they move in" (Cronbach's α =.80) (see Appendix D).

Implicit normative evaluation measure. I used the same implicit normative evaluation measure as the one used in previous studies except for the category labels and stimulus items. The category labels were "most people like" "most people don't like" and "Black" and "object." Participants were asked to categorize photos of African Canadians and photos of objects as quickly and accurately as possible. Higher values on this measure indicate positive normative evaluations towards African Canadian.

Implicit attitudes measure. The implicit attitudes measure was the same as the implicit normative evaluation measure except that the category labels were "I like" and "I don't like." The higher values indicate positive implicit attitudes towards African Canadians.

Motivation to control prejudiced reaction scale (Dunton & Fazio,1997). This scale assesses the individual difference in motivation to control expression of prejudice. An example item is "I feel guilty when I have a negative thought or feeling about a Black person" (Cronbach's α =.88) (see Appendix E).

Computer simulation. The program was developed by Correll and his colleagues (2002) using PsyScope software (Cohen, MacWhinney, Flatt, & Provost, 1993). The computer

simulation had a total of 80 target images which were presented with 20 photos of various backgrounds. The target consisted of 25 African American and 25 European American models, and each of them appeared twice, one holding a gun and the other holding a harmless object (e.g., cell phone) in five basic poses. There were total of 100 images (25 for each condition: African American with a gun, African American with a harmless object, European American with a gun and European American with a harmless object). The images of the target were randomly superimposed on various backgrounds with each type of target appearing in each background with the equal frequency.

In each trial, zero to three photos of unpopulated backgrounds appeared on a computer screen. The number of background photos and the duration of the presentation (500 ms – 800 ms) were randomly determined. Following the presentation of the preliminary backgrounds, a final background was presented, which was replaced by a photo of a target model superimposed on the final background. From a participant's perspective, the target model seemed to appear on the background.

Participants were asked to "shoot" a target who was holding a gun and "not shoot" a target who was holding a harmless object by pressing a response key as quickly as possible. Participants earned points based on their performance. They earned five points if they did not "shoot" a target who was holding a harmless object, but if they did they would lose 20 points as a penalty of shooting an innocent victim. They earned 10 points by "shooting" an armed target, but failing to "shoot" an armed target resulted in loss of 40 points as a penalty. If participants did not respond within the 850 ms response window, they would lose 10 points. Visual and auditory feedback on participants' responses was presented at the end of each trial. There were 16 practice trials and 100 trials following the practice trials.

Procedure

Participants were asked to complete the implicit attitudes measures implicit normative evaluation measures and the corresponding explicit measures approximately four to eight days before coming to the lab. The attitude measures and normative evaluation measures were separated by at least four days to reduce carryover effects. The order of attitudes measure and normative evaluation measure was counterbalanced. In the lab session, a Caucasian female experimenter explained the detailed procedures of the computer simulation. She also explained that participants had an opportunity to earn up to $5.00 if they perform well. The purpose of monetary incentive was to ensure sustained effort on the computer simulation. After completing the computer simulation, the participants were fully debriefed.

Results and Discussion

Do people respond to a Black and White target differently? Following Correll's procedures (2002), the response latencies for incorrect responses or time out were excluded from the analyses. To examine whether there is any difference in response latencies, I conducted a 2 (ethnicity of target: African American vs. European American) x 2 (object: gun vs. no gun) ANOVA with ethnicity of target and object as within-subject factors. Replicating Correll's findings (2002), there was a significant main effect of object, such that people responded to a target who was holding a gun faster than to target who was holding a harmless object, $M = 561.42$, $M = 627.11$, respectively, $F(1, 51) = 343.15$, $p < .0001$. There was also a significant interaction between object and ethnicity of target, suggesting that the response latencies of target with a gun vs. no gun depended on the target's ethnicity $F(1, 51) = 71.91$, $p < .0001$. Simple effects of object and ethnicity revealed that when participants were exposed to unarmed target, it took them more time to "not shoot" the African American targets than the European American

targets $M = 619.02$ vs. 635.20, respectively, $F(1, 51) = 28.36$, $p < .0001$. When participants responded to target who was holding a gun they were faster to "shoot" an African American target than a European American target ($M = 552.68$ vs. 570.15, respectively, $F(1, 51) = 34.65$, $p < .0001$).[11]

Error rates of the shooter bias. The shooter bias task had a response window (850 ms) that was long enough to minimize the error rates. The average error rate was 1.28% and thus was quite low. Nevertheless, to examine the differences in the error rates in the condition, a 2 (ethnicity of target: European American vs. African American) x 2 (object: gun vs. no gun) ANOVA with ethnicity and object as within-subject factors was conducted. Consistent with the previous findings (Correll et al., 2002), a weaker shooter bias appeared in error rates. There was a marginally significant interaction between ethnicity of target and object, $F(1, 51) = 3.79$, $p < .06$. Simple effects test showed a significant effect on armed target, such that people failed to "shoot" an armed target (i.e., miss) when the target was European American than when the target was African American ($M = 1.37$ vs .98, respectively), $F(1, 51) = 4.07$, $p < .05$. The simple effect of unarmed target was not significant $F(1, 51) = .61$, *n.s.*

Do differences response latencies and the decision criterion explain Amadou Diallo's case? The pattern of results suggests that people tend to take longer to detect a harmless object when a target is Black than when a target is White. Therefore, one can imagine that under time pressure people will be more likely to shoot an innocent Black target than an innocent White target. Indeed, past studies found that when people were under time pressure in a response window of 630 ms, they were more likely to shoot an innocent Black target than an innocent

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[11] Female participants showed significantly stronger shooter bias than did male students ($F(1, 51) = .037$, $p < .05$). However, the interactions between ethnicity of target and object were significant for both male students and female students ($F(1, 51) = 12.16$, $p < .05$, $F(1,51) = 72.80$, $p < .001$, respectively).

White target (Correll et al, 2002). Given that police officers are not immune to the shooter bias (Correll et al., 2007), the shooter bias may emerge even among those who have received a professional training.

Why does the shooter bias emerge? Because the interaction between object and ethnicity of target was significant, I created an index of the magnitude of the shooter bias based on response latencies. More specifically, I subtracted the response latencies for African American armed target from those of European American armed target. Then, I subtracted the response latencies for European American unarmed target from those of African American unarmed target. I added these response latencies together. The higher values indicate faster response latencies for armed African American target than armed European American target and for unarmed European American target than unarmed African American target (i.e., a stronger shooter bias). I then examined the relation of the shooter bias index to measures of racism, implicit and explicit attitudes, and implicit and explicit normative evaluations.

The evaluative thermometer and Old-Fashioned Racism scale showed a reasonably strong negative correlation ($r = -.46$, $p < .01$); therefore, I reverse scored the evaluative thermometer scores and standardized them as well as Old-Fashioned Racism scores. Then, I obtained the average scores between these two standardized scores to create an index of explicit attitudes towards African Canadians. The scores were then reversed such that higher values indicated more positive attitudes towards African Canadians. Regarding the explicit normative evaluation measures, the evaluative thermometer was not correlated with perceived discrimination in merit assessment scale ($r = .05$). Therefore, I examined the correlation between the shooter bias and these explicit normative evaluation measures separately. The correlation matrix was summarized in Table 3.

Table 3.

Correlation matrix for implicit and explicit attitudes and normative evaluations and the shooter bias

	Shooter bias	Implicit attitudes	Implicit norms	Explicit attitudes	Explicit norms	Perceived bias	MCP
Shooter bias	__						
Implicit attitudes	.09	__					
Implicit norms	-.30*	.15	__				
Explicit Attitudes	.27+	.21	.07	__			
Explicit norms	.009	.19	-.04	.25+	__		
Perceived Bias	.16	.01	.19	.08	.05	__	
MCP	-.12	.08	.22	.05	.16	.35**	__

Note: MCP = motivation to control scale, Perceived bias = Perceived Discrimination in Merit

Assessment Scale (* $p < .05$ ** $p < .01$ + $p < .10$)

Recall our hypothesis that the shooter bias will not be related to explicit constructs.

Because participants made a decision under time pressure, the shooting task was operated in

relatively automatic processes. Consistent with the hypothesis and previous studies (Correll et

al., 2002), implicit or explicit attitude measures or motivation to control prejudice were not

correlated with either types of the shooter bias.

As can be seen in Table 3, negative normative evaluations towards African Canadians

were related to stronger shooter bias. Why would implicit normative evaluations be correlated

with the shooter bias? I argue that by living in a society, people are exposed to negative

treatment or depictions of African Canadians and this exposure shapes people's implicit

normative evaluations that most people associate African Canadians with being violent or

aggressive. Because these associations are likely to be well learned and efficient, they can affect split second decision making more strongly than explicit constructs.

These implicit normative evaluations are independent of personal attitudes or beliefs (Devine 1989). Indeed, the data showed that the implicit attitudes and normative evaluations are at most weakly correlated with each other ($r = .15$, ns). I argue that implicit attitudes and normative evaluations develop in different ways. Specifically, I argue that implicit attitudes develop through personal experience, whereas implicit normative evaluations will develop through exposure to how most people treat and evaluate social groups. Because people are not likely to have experience with Black people in the context of shooting or violent crimes, implicit attitudes may not be related to these aspects. In contrast, implicit normative evaluations may reflect violent aspects of Black people that are portrayed in the media. Consistent with this reasoning, implicit normative evaluations towards Black people were significantly more negative than implicit attitudes ($M_{(norms)} = -42.5$ $SD = 195.9$ vs. $M_{(attitudes)} = 22.8$ $SD = 158.6$), $F_{(1, 56)} = 4.45$, p $< .05$). Furthermore, when implicit attitude and normative evaluation were entered in the regression equation simultaneously, negative implicit attitudes marginally predicted less shooter bias, whereas negative implicit normative evaluation significantly predicted more shooter bias, $\beta = .27$, $t_{(42)} = 1.83$, $p = .07$, $\beta = -.37$, $t_{(42)} = -2.53$, $p = .015$, respectively. Therefore, even if people develop positive implicit attitudes towards African Canadians, they still may be affected by culturally shared beliefs towards African Canadians.

CHAPTER 4: GENERAL DISCUSSION

The first series of studies established the convergent and discriminant validity of implicit normative evaluation measures. Study 1a and 1b showed that implicit normative evaluations and implicit attitudes predicted the traditional IAT independently, suggesting implicit attitudes and normative evaluations are independent constructs. Study 1a and b also provided evidence that implicit normative evaluations can be measured by using a modified version of the IAT. Study 2 provided further discriminant validity of implicit normative evaluations by demonstrating that implicit attitudes and normative evaluations are predicted by different acculturation measures for Asian-Canadians. Specifically, the length of time spent in Canada predicted implicit normative evaluations of older people such that the longer Asian-Canadians spent in Canada, the more negative their implicit normative evaluations towards older people became. In contrast, their implicit attitudes were predicted by the strength of identification with Canadian culture. This study also shows that the exposure to cultural norms shapes implicit normative evaluations towards social groups.

Study 3 examines how exposure to other people's reactions will shape implicit normative evaluations more directly in an experiment. When White participants were exposed to an audience who laughed at the offensive racist jokes targeting people from the Middle East, they exhibited significantly more negative implicit normative evaluations towards people from the Middle East than White participants who were exposed to the audience who did not laugh at the racist jokes. Furthermore, White participants who had more negative implicit normative evaluations tended to engage in discriminatory behaviour by providing less money to the Muslim Student Association.

Finally, Study 4 showed that implicit normative evaluations towards African-Canadians predicted the shooter bias such that those who have negative implicit normative evaluations towards African-Canadians took more time to avoid shooting a target without a gun and established a more lenient criterion for shooting a target when the target was African Canadian than when the target was European Canadian. Consistent with previous research (Correll et al., 2002), implicit attitudes were not correlated with the shooter bias. These results suggest that people's decisions to "shoot" or "not shoot" a target may be partly influenced by societal views of African Canadians that they are violent or aggressive. Taken together, these studies provide evidence that implicit normative evaluations can be measured and be shaped by exposure to cultural norms and that they predict behaviour.

<div align="center">Implicit Attitudes vs. Normative Evaluations</div>

The current research has demonstrated that implicit attitudes and normative evaluations are formed in different ways and predict behaviour in different contexts. Research has shown that implicit attitudes are formed through early life experience (Rudman, Phelan & Heppen, 2007), by figuring out what the world is like and how things will work. In contrast, I argue that implicit normative evaluations are formed by exposure to other people's beliefs, preferences or behaviour in a given context because understanding other people's preferences or beliefs is an important task to be a good member of a group (Schachter, 1951). Consistent with this reasoning, Study 2 showed that exposure to culturally shared beliefs about older people influenced implicit normative evaluations. More specifically, the more Asian-Canadians were exposed to a Canadian culture, the more their implicit normative evaluations towards older people became consistent with Canadian normative beliefs and became more negative. However, implicit attitudes were not affected by exposure to Canadian culture.

Similarly, Study 3 found that those who were exposed to the audience who laughed at offensive racist jokes exhibited more negative implicit normative evaluations towards people from the Middle East. These implicit normative evaluations led to discriminatory behaviour such that the more negative implicit normative evaluations towards people from the Middle East became, the more they engaged in discriminatory behaviour. These results suggest that implicit normative evaluations play an important role in expression of prejudice and discrimination. Importantly, this study showed that implicit attitudes were not affected by exposure to the audience's reactions neither did implicit attitudes predict discriminatory behaviour, suggesting that implicit attitudes and normative evaluations are different constructs and have different antecedents and consequences.

Finally, Study 4 examined a domain in which the formation of implicit attitudes and normative evaluations tend to diverge. If implicit attitudes towards Black people are formed through experience with them, then implicit attitudes should be related to mundane behaviour or events. Most people do not have opportunities to interact with Black people in dangerous situations that involve shooting or physical fights as depicted in the media. In contrast, most people in North American society are exposed to depictions of Black people as violent or dangerous. Therefore, implicit normative evaluations towards Black people may reflect culturally shared beliefs about Black people being more dangerous or violent than most people actually find through personal experience. Consistent with this reasoning, I found that implicit attitudes were more positive than implicit normative evaluations. Furthermore, the shooter bias was related to the implicit normative evaluations about Black people but not implicit attitudes. This pattern of results suggests that implicit attitudes and normative evaluations are shaped through different processes and predict behaviour differently.

The current research has focused on the conditions under which implicit normative evaluations are shaped and influence behaviour. I found that implicit normative evaluations predicted behaviour over and above implicit attitudes. Studies 1a and 1b show that implicit normative evaluations predicted the traditional IAT after controlling for implicit attitudes. Similarly, Study 2 shows that the length of time spent in Canada predicted implicit normative evaluations towards older people after controlling for implicit attitudes for Asian-Canadian participants. In Study 4, the significant correlation between implicit normative evaluations and the shooter bias remained even after controlling for implicit attitudes. Moreover, implicit normative evaluations predicted behaviour when implicit attitudes failed to predict the same behaviour. These results support the validity of implicit normative evaluations and antecedents and consequences of implicit normative evaluations. However, these results do not necessarily suggest that implicit attitudes do not play a role in predicting discriminatory behaviour. Extensive literature documented that implicit attitudes predict behaviour when the self evaluations are salient, such as interracial interaction (e.g., Dovidio et al., 1997), consumer behaviour (e.g., Maison, Greenwald & Bruin, 2004) and voting behaviour (Olson & Fazio, 2004). I speculate that implicit attitudes will be shaped through personal experience and that when the self evaluations have important outcomes implicit attitudes will predict behaviour. In contrast, implicit normative evaluations will be shaped through exposure to other people's reactions and when normative influences become salient, implicit normative evaluations will influence behaviour. Future research should examine these conditions empirically.

The current research demonstrated that implicit attitudes and normative evaluations are independent constructs and have different antecedents and consequences. Although I have not examined how implicit attitudes and implicit normative evaluations will be related to each other,

it seems reasonable that under certain conditions, these two constructs may influence each other. For example, if people have negative implicit attitudes towards social groups or objects, how they treat or depict these social groups or objects may be subtly influenced by the negative implicit attitudes, which may create negative normative evaluations in others. Similarly, negative normative evaluations towards social groups or objects may affect how people interact with these social groups or objects outside of awareness and these experiences may shape implicit attitudes. Future research should examine these conditions empirically.

<div align="center">Limitations of Measurements of Implicit Normative Evaluations</div>

Category labels. I used the category labels "flower" vs. "insect" / "apple" vs. "candy bar" in the first series of studies and "young" vs. "old" in the second study. However, because the IAT effects are interpreted as a relative preference, it is not clear whether people have positive evaluation of one object or negative evaluation of the other object (Greenwald & Farnham, 2000). To overcome these limitations, in Studies 3 and 4, I chose the category labels "Middle Easterner" vs. "object" and "Black" vs. "object" assuming that the category label "object" will provide baseline evaluations. Future research should examine this assumption empirically.

In Study 3, I used the category label "Middle Easterner" referring to people from the Middle East. However, the operationalization may not have caught the complex issues of prejudice and discrimination against Arabs and Muslims. Arabs and Muslims are targets of discrimination even if they are not from the Middle East (Meer, 2008). Although the implicit normative evaluation measure was influenced by the audience's laughter and predicted discriminatory behaviour, ideally I could have validated the category labels.

Reference group. Throughout the studies, the instruction of the IAT says "most people" refers to people in North America; however, the reference groups have not been empirically

examined. It is not established if it will make a difference whether "most people" is in-group or out-group members.

In particular, in Study 2 I used photos of Caucasian older and younger people for implicit measures. These photos may have implied the reference group and participants may have assumed that "most people" were people who lived in Canada. If I had used photos of Asian older and younger people, then participants might have assumed that most people were people in Asia. Future studies should examine how change in a reference group will affect pattern of results. If reference groups affect the patterns of results, then tailoring category labels may be required. Future research should examine this issue empirically.

Operationalization of normative evaluations. I operationalized implicit normative evaluations based on most people's preferences or beliefs. Therefore, based on beliefs or preferences that I would like to examine, I used the category labels "most people like" or "most people believe in." However, it is not clear whether normative evaluations about beliefs ("most people believe in") function in the same way as preferences ("most people like"). In addition, literature has separated the influence of descriptive vs. injunctive normative evaluations (Cialdini, Reno & Kallgren, 1990). Descriptive norms are defined as beliefs, preferences or behaviour that most people engage in and injunctive norms are defined as beliefs or behaviour that people should engage in (Cialdini, Reno & Kallgren, 1990). In this research, I have examined how descriptive normative evaluations will be shaped outside of awareness and how these normative evaluations will influence behaviour. However, it is important to examine the antecedents and consequences of injunctive normative evaluations and relation between these two types of norms. Future research should examine appropriate use of category labels to assess implicit normative evaluations empirically.

Limitations of Designs of Studies

In Study 2, I examined how implicit normative evaluations towards older people will change after Asian-Canadians come to Canada. However, because this issue was examined using a cross-sectional design, I cannot examine the process through which implicit normative evaluations will change overtime. Future research should examine this issue longitudinally.

Study 4 employed a correlational design; therefore, it is not clear whether negative implicit normative evaluations cause the shooter bias or these negative implicit normative evaluations are a product of the shooter bias. Future study should examine this issue experimentally. Nevertheless, to overcome this issue, in Study 3 I experimentally manipulated normative evaluations by changing the audience's reactions towards people from the Middle East.

External validity. Because I examined the influence of normative evaluations on prejudice and discrimination in controlled laboratory settings, it is not established how much of our results can be applied to the real world. For example, although Study 3 examined consequential discriminatory behaviour, I have not examined discrimination in the context of a face to face interaction with a target. Similarly, in Study 4 I used a computer simulation and participants were asked to indicate their responses by pressing a response key. Although I provided incentive to motivate participants to do well, it is not feasible to examine behaviour under the psychological pressure that people would experience when they encounter someone who is holding something in a dangerous situation.

Implications for Research on Implicit Processes

Although the constructs of implicit normative evaluations are not new and traditionally social psychologists have examined these constructs, this research is the first to demonstrate that

implicit normative evaluations can be measured by using a modified version of the IAT. The first series of studies demonstrated that the traditional IAT is independently predicted by both implicit attitudes and normative evaluations. These results suggest that implicit normative evaluations and attitudes are not the same constructs and the traditional IAT is influenced by these two distinct associations. When attitudes and normative evaluations are congruent with each other, the traditional IAT can capture these constructs. However, when attitudes and normative evaluations are incongruent with each other, such as predicting behaviour in the opposite direction, then the traditional IAT will not be able to detect the effect. For example, in our society vegetables are considered healthy and desirable; however, individual preferences may not always be consistent with what culture prescribes. Indeed, I found that implicit attitudes towards vegetables predicted how much vegetables European-Canadians ate in the lab, such that those who have positive implicit attitudes towards vegetables ate more vegetables. In contrast, implicit normative evaluations predicted eating behaviour in the opposite directions such that European-Canadians who have positive implicit normative evaluations towards vegetables ate less vegetables (Yoshida, et al., 2009). The traditional IAT would not predict eating behaviour in this case. By separating the personal association and normative associations, I extended the IAT research.

<div align="center">Implications for Stereotyping and Prejudice Research</div>

Research has documented that expression of prejudice and discrimination has changed and people no longer endorse blatant forms of prejudice. However, subtle forms of prejudice still persist and people tend to express prejudice or discrimination in ambiguous situations or when there is an excuse to do so (Dovidio & Gaertner, 2000). Social norms also play a role in these expressions (Blanchard et al., 1994; Crandall & Eshleman, 2003). Past research that examined

normative influences on stereotyping and prejudice often manipulated other people's reactions or assessed normative influences at the explicit level. For example, White participants exposed to a confederate who expresses antiracist views were more likely to express antiracist views than those who were not exposed to the confederate. Similarly, those who were exposed to a confederate who endorses racist views were more likely to express more racist views than those who were not exposed to the confederate (Blanchard, Crandall, Brigham, & Vaughn, 1994). However, these studies did not assess normative evaluations at the implicit level. People may not be aware of the influences or asking them about these questions may make people suspicious of the purpose of the study. By using a measurement tool to assess implicit normative evaluations, I can identify the mechanism under which these effects are obtained.

Practical Implications

Our research has shown that implicit normative evaluations play a role in expression of prejudice or discrimination. When people are exposed to negative normative evaluations about social groups, people are more likely to form negative implicit normative evaluations towards them and are more likely to engage in discriminatory behaviour. Moreover, people are often unaware of the influences of normative evaluations on their behaviour. What can we do to reduce prejudice or discrimination?

Given that prejudice and discrimination tends to be expressed in subtle ways (Dovidio & Gaertner, 2000) changing explicit normative evaluations may not effectively reduce prejudice. People already endorse egalitarian values and are motivated to believe that they are not prejudiced (Dovidio & Gaertner, 2000). I propose that changing subtle normative evaluations in ambiguous situations may be effective to reduce prejudice and discrimination. Indeed Study 3 showed that when people are exposed to the audience who did not laugh at the offensive racist

jokes were less likely to engage in discriminatory behaviour. If treatments or depictions of social groups have been improved, people may pick up these subtle changes, which may have positive impact on behaviour. This view is consistent with Allport's insight (1954):

> Suppose the child attends a lesson in intercultural education in the classroom. The chances are this lesson will be smothered by the more embracing norms of his family, gang, or neighbourhood. To change the child's attitudes it would be necessary to alter the cultural equilibrium of these, to him, more important groups. It would be necessary for the family, the gang, or the neighbourhood to sanction tolerance before he as an individual could practice it. This line of thought has led to the dictum, "It is easier to change group attitudes than individual attitudes." Recent research lends some support to the view. In certain studies whole communities, whole housing projects, whole factories, or whole school systems have been made the target of change. By involving the leaders, the policies, the rank and file, new norms are created, and when this is accomplished, it is found that individual attitudes tend to conform to the new group norm (Allport, 1954 p.40).

Finally, this research highlights the importance of subtle social influence. Exposure to how social groups are treated or depicted in the media may shape implicit normative evaluations towards the groups. These normative evaluations have a powerful impact on behaviour without conscious effort. Like Allport's observation, exposure to other people's subtle expressions or normative evaluations can lead to discriminatory behaviour. By understanding the mechanism and changing the environment, we may be able to develop effective interventions to combat racism.

Appendix A: Stimulus items for implicit measures

Study 1a	Stimulus items	Flower items	Insect items
	party	daisy	ant
	smile	tulip	yellow jacket
	friend	carnation	housefly
	joy	lily	maggot
	happy	rose	cockroach
	sunshine		
	love		
	gift		
	holiday		
	warmth		
	disease		
	abuse		
	garbage		
	death		
	agony		
	pain		
	evil		
	vomit		
	disaster		
	stink		

Study 1b	Stimulus items	Apple items	Candy bar items
	Same items in Study 1a	Granny Smith	Caramilk
		Red Delicious	Twix
		Winesap apples	KitKat
		Gala apples	Reese
		Golden Delicious	Oh Henry!

Study 2	Stimulus items	Young items	Old items
	sadness	Four faces of young men and women (two for each)	Four faces of old men and women (two for each)
	hate		
	dishonesty		
	injustice		
	oppression		
	honesty		
	happiness		
	love		
	justice		
	freedom		

Study 3 and 4 used the same positive and negative words as in Study 1a and 1b. For Study 3, I used four photos of European-Canadian and Muslim people (two men and two women). For Study 4, I used a stapler, desk, fork and chair for the neutral object category label and photos of four Black and White men.

Appendix B: Perceptions of Bias in Merit Assessment Scale (Study 3)

An important issue for organizations is the assessment of merit (or qualifications) in the workplace. One concern is whether criteria such as an individual's skills, abilities, and knowledge are accurately assessed in both personnel selection and performance evaluation. We are interested in the extent to which individuals believe that biases against visible minorities currently exist and/or historically existed (a) in the criteria chosen for selection and performance evaluation and (b) in the measurement of those criteria in organizations. Please note: We are referring to both intentional and unintentional biases that currently exist or historically existed *in general* within organizations.

Please circle the number from 1 to 7 indicating the extent to which you agree or disagree with each of the following statements.

1. Historically, subtle personal biases of job interviewers disadvantaged visible minorities job applicants in the assessment of their qualifications.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

2. In the past, visible minorities were unfairly disadvantaged during performance evaluations because white managers often, consciously and/or unconsciously, exhibited in-group favoritism in the assessment of employees' qualifications.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

3. In the past, white interviewers sometimes used different criteria for different ethnic groups during the selection process, disadvantaging visible minorities.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

4. In the past, visible minorities' performance and potential were underestimated in the workplace.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

5. Historically, the ability of visible minority employees was accurately reflected in their salaries.

1	2	3	4	5	6	7

Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

6. Historically, in both personnel selection and performance evaluation, there were no biases against visible minorities in the assessment of their competence.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

7. In the past, visible minorities received bonuses based on a fair evaluation of their work.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

8. In the past, visible minorities' ability has been assessed fairly by managers when making promotion decisions.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

9. Historically, visible minority workers' skills have been underestimated, biasing who was selected for important work assignments.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

10. Historically, deserving visible minorities were not disadvantaged in their opportunities to be selected for upper-level management positions.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

11. In the past, bias existed against visible minorities in the selection tests used to evaluate their skills and abilities.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

12. Currently, visible minorities are not disadvantaged in performance evaluations because of managers' personal biases against visible minority employees.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

13. Currently, selection systems recognize the full potential of visible minority candidates because cultural diversity, language skills, and different perspectives are appropriately valued by organizations.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

14. Currently, barriers against visible minorities exist in some tests used for personnel selection (e.g., intelligence tests) because the tests are inherently biased in favor of groups who are familiar with North American cultural norms.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

15. Currently, in personnel selection, there is little bias against visible minorities in the assessment of their abilities.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

16. Currently, bias exists against visible minorities in the process of assessing skill-level and ability, unfairly disadvantaging visible minorities when salaries and bonuses are determined.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither Disagree	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

17. Currently, regardless of personal intentions, personal prejudices against visible minority workers influence perceptions of their performance, unfairly disadvantaging them.

1	2	3	4	5	6	7

Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

18. Currently, when selecting employees for promotions and special assignments, visible minorities are evaluated in a fair manner that does not disadvantage them.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

19. Currently, managers do not provide equal opportunities for visible minority employees to work on special assignments, as bias exists in the evaluations of their qualifications.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

20. Currently, when managers decide which employees deserve bonuses and benefits, visible minority are not discriminated against.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

21. Currently, visible minorities earn salaries that are less than they deserve on the basis of their abilities and effort on the job.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

22. Currently, visible minorities are not disadvantaged when their work performance is assessed.

1	2	3	4	5	6	7
Strongly	Moderately	Slightly	Neither	Slightly	Moderately	Strongly
			Disagree			
Disagree	Disagree	Disagree	Nor Agree	Agree	Agree	Agree

Appendix C: Budget Reduction Exercise (Study 3)

Federation of Students' Survey on Campus Club Funding

As you are probably aware, the Federation of Students subsidizes academic and social clubs on campus. Unfortunately, given the current financial climate, the Federation of Students has recently announced that they will be forced to cut the amount of money that is allocated to academic and social clubs by 20%. At the present time, we have been asked by the Federation of Students to assist them in assessing how undergraduates enrolled in psychology classes would allocate funds. We would like your opinion on which clubs you feel should have their funding increased, decreased, or left at the same level. Listed on the ballot accompanying this letter is a small subset of the clubs that receive funding from the Federation of Students. Listed beside the name of each club is the current amount of funding they receive. For instance, the UW Field Naturalist Club receives $275 from the Federation of Students. In addition, you will see that the subset of clubs listed below received a total of $5000 this year. Thus, next year, given cuts of 20%, these clubs will probably receive only $4000 combined. By completing the ballot on the following page, we would like you to provide your vote as to the amount of funding each of these groups should receive next year. That is, we want you to list the amount of money you would like each of the groups listed below to receive. When doing this, remember that your total should not exceed $4000. When you have completed this anonymous ballot, your vote will be sent to the Federation of Students to aid in their decision making concerning any budget increase, reduction or no change at all. Thank you for taking the time to complete this short survey.

Federation of Students' Survey on Campus Club Funding

Club	2007-2008	2008-2009
- Swing and Dance Social Club	$675	
- UW Field Naturalist Club	$275	
- Athletes in Action	$625	
- Gays and Lesbian of Waterloo (GLOW)	$475	
- Waterloo Christian Fellowship	$350	
- Muslim Students' Association	$575	
- UW Pre-Optometry Club	$700	
- Orthodox Christina Fellowship	$525	
- Engineers Without Borders	$475	
- Debating Society	$325	
TOTAL	$5000	$4000

Appendix D: Old Fashion Racism Scale (Study 4)

Please indicate your reaction to each of the statements by selecting the number corresponding with your opinion. There are no correct answers so please respond as accurately as possible.

1) Most whites fear that blacks will bring violence to neighbourhoods when they move in.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

2) If a black were put in charge of me, I would not mind taking advice and direction from him or her.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

3) I would rather not have blacks live in the same apartment building I live in.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

4) I would probably feel somewhat self-conscious dancing with a black in a public place.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

5) I would not mind it at all if a black family with about the same income and education as me moved in next door.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

6) I think that black people look more similar to each other than white people do.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

7) Interracial marriage should be discouraged to avoid the "who-am-I" confusion which the children feel.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

8) I get very upset when I hear a white make a prejudicial remark about blacks.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

9) It would not bother me if my new roommate was black.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

10) It is likely that blacks will bring violence to neighbourhoods when they move in.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

11) I enjoy a funny racial joke, even if some people might find it offensive.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

12) The federal government should take decisive steps to override the injustices blacks suffer at the hands of local authorities.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

13) Black and white people are inherently equal.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

14) I worry that in the next few years I may be denied my application for a job or a promotion because of preferential treatment given to minority group members.

1	2	3	4	5	6	7	8	9
Strongly				Neutral				Strongly

disagree   agree

15) Racial integration (of schools, businesses, residences, etc.) has benefited both whites and blacks.

1   2   3   4   5   6   7   8   9
Strongly   Neutral   Strongly
disagree   agree

16) Some blacks are so touchy about race that it is difficult to get along with them.

1   2   3   4   5   6   7   8   9
Strongly   Neutral   Strongly
disagree   agree

Appendix E: Motivation to Control Prejudice Scale (Study 4)

This questionnaire is part of an investigation of people's general opinions concerning a variety of social issues. You will probably find that you agree with some of the statements, and you disagree with others, to varying degrees. Please indicate your reaction to each of the statements by selecting the number corresponding with your opinion using the following scale. There are no correct answers so please respond as accurately as possible.

1	2	3	4	5	6	7	8	9
Strongly disagree				Neutral				Strongly agree

1. _____In today's society it is important that one not be perceived as prejudiced in any manner.

2. _____ I always express my thoughts and feelings, regardless of how controversial they might be.

3. _____I get angry with myself when I have a thought or feeling that might be considered prejudiced.

4. _____ If I were participating in a class discussion and a Black student expressed an opinion with which I disagreed, I would be hesitant to express my own viewpoint.

5. _____ Going through life worrying about whether you might offend someone is just more trouble than it's worth.

6. _____ It's important to me that other people not think I'm prejudiced.

7. _____ I feel it's important to behave according to society's standards.

8. _____ I'm careful not to offend my friends, but I don't worry about offending people I don't know or don't like.

9. _____ I think that it's important to speak one's mind rather than to worry about offending someone.

10. _____ It's never acceptable to express one's prejudices.

11. _____ I feel guilty when I have a negative thought or feeling about a Black person.

12. _____ When speaking to a Black person, it's important to me that he/she does not think I'm prejudiced.

13. _____ It bothers me a great deal when I think I've offended someone, so I'm always careful to consider other people's feelings.

14. _____ If I have a prejudiced thought or feeling, I keep it to myself.

15. _____ I would never tell jokes that might offend others.

16. _____ I'm not afraid to tell others what I think, even when I know they disagree with me.

17. _____If someone who made me uncomfortable sat next to me on a bus, I would not hesitate to move to another seat.

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