The Face of a Nation: The Effect of Nationality on Face Memory and Perception

by

Ragnheidur Thora Bjornsdottir

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Department of Psychology
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Ragnheidur Thora Bjornsdottir

Master of Arts

Department of Psychology

University of Toronto

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Abstract

Nationality is a pervasive group membership, and previous research has variously demonstrated its potency. However, little work has investigated nationality’s relationship with person perception, an area ripe for research in today’s globalized world. Thus, the aim of this thesis was to understand how nationality affects one’s perception and memory of others. I tested how randomly pairing faces with Canadian and foreign flags affected Canadians’ memory and trait evaluations for these faces and whether nationalism predicted ingroup favouritism. I also compared memory differences for ostensible national ingroup and outgroup members to that for university ingroup and outgroup members to determine the relative importance and strength of nationality over other social identities. Across three studies, I found that Canadian participants recognized faces randomly paired with the Canadian flag better than those paired with a foreign flag, suggesting that nationality labels can affect memory for others, which has important implications for cross-national interactions.
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Chapter 1

Introduction

1 Literature Review

1.1 Nationality

In our increasingly globalized world, people of varying nationalities interact with one another daily. Nationality is a legal status, but it is also a group membership with a variety of potential effects and implications for how we perceive, judge, and interact with others. To many, their nationality is an incredibly important part of their identity (Kosterman & Feshbach, 1989); and yet it is a group membership that is in many ways quite arbitrary – determined by where one happens to be born, where one’s family chances to reside, or where one goes to seek education or employment. Indeed, nationality can also change during one’s lifetime. Thus, nationality’s somewhat arbitrary assignment, malleability, and personal significance make it qualitatively different from many of the other group memberships examined in the psychological literature to date, most of which tend to be relatively fixed (e.g., gender) or arbitrary and malleable (e.g., minimal groups), but not both. This leads to the question of how identification with one’s national ingroup might influence thought and behaviour differently than one’s other group memberships.

Previous research has demonstrated the importance and power of nationality in a variety of ways. For example, research on national cue priming has shown that subtly priming participants with a national cue such as a flag leads to shifts in attitudes and behaviour that align with the norms implicitly or explicitly associated with that nation (Carter, Ferguson, & Hassin, 2011b). For example, subtle exposure to the American flag increases aggression for those who tend to follow the news (Ferguson & Hassin, 2007), and leads to increased prejudice toward minority groups (Hassin et al., 2009), as well as changes in trust levels dependent on associations between the U.S. and surveillance (Bjornsdottir & Ferguson, 2015). Furthermore, American flag priming leads to shifts toward Republicanism both in stated attitudes and actual voting behaviour, as the American flag is perceived to be more closely associated with the Republican than the
Democratic Party (Carter, Ferguson, & Hassin, 2011a). Priming participants with the Israeli flag similarly leads to shifts toward mainstream Zionism (the political centre of Israel) and increased prejudice toward minority groups (Hassin et al., 2009; Hassin, Ferguson, Shidlovski, & Gross, 2007). Overall, these studies demonstrate the potency of national symbols and, by extension, the potency of the idea of nations themselves – what effects on cognition and behaviour, then, might being a member of a nation have?

Along those lines, Doty (1998) demonstrated that perceivers’ and targets’ nationalities significantly impacted perceivers’ memory for targets of various nationalities. He showed participants faces of people from their own nation and other countries, and also played voice recordings of these same targets. Following this, he asked the participants to choose which face or voice they had seen or heard from a set of 10 images or audio clips. He found that participants more accurately remembered the faces and voices of people of their own nationality, as compared to the faces and voices of people of other nationalities, thus demonstrating an ingroup favouritism effect of nationality on person memory.

Another aspect of nationality that has received some attention is how people identify with their nationalities. Those whose identities are fused with their nations (i.e., those who feel a powerful oneness with the national group) display greater willingness to sacrifice for the nation (Swann et al., 2014). Additionally, researchers have found higher national identification to be associated with greater ingroup biases, increased negative attitudes toward immigrants, and greater nationalism (that is, feelings of national superiority) in those primed with intergroup comparison (Louis, Esses, & Lalonde, 2013; Mummendey, Klink, & Brown, 2001; Nigbur & Cinnirella, 2007). These findings, like those of Doty (1998), can be interpreted as a national ingroup favouritism effect.

1.2 Ingroup favouritism

As nationality is an example of an ingroup – that is, citizens belong to the national group whereas foreigners do not – it is important to consider research on ingroup favouritism. A wealth of research has continually demonstrated that we favour those who belong to the same groups as we do, even if these groups are minimal. This favouritism manifests itself in more positive impressions and mental representations of, as well as more positive attitudes and behaviours
toward, ingroup versus outgroup members (e.g., Ratner, Dotsch, Wigboldus, van Knippenberg, & Amodio, 2014; Tajfel, Billig, Bundy, & Flament, 1971). For example, mental representations of ingroup faces in a minimal group elicited more favourable impressions and were trusted more than representations of outgroup faces in one study (Ratner et al., 2014).

People also display increased attention and memory for ingroup members of social groups, including both perceptually obvious groups (e.g., race; Sporer, 2001) and perceptually ambiguous groups (e.g., sexual orientation; Rule, Ambady, Adams, & Macrae, 2007). This also applies to minimal groups – people recognize the faces of minimal ingroup members better than the faces of those in the minimal outgroup (Van Bavel & Cunningham, 2012; Van Bavel, Swencionis, O’Connor, & Cunningham, 2012). This difference is greater for those who identify more strongly with their group, as well as for those with a greater need to belong (Van Bavel & Cunningham, 2012; Van Bavel et al., 2012).

1.3 Impressions from faces

Recent work on ingroup favouritism has focused on impressions of, and memory for, ingroup and outgroup faces (e.g., Ratner et al., 2014; Van Bavel & Cunningham, 2012; Van Bavel et al., 2012). Interpersonal interactions begin with first impressions, and such impressions are powerfully influenced by a person’s face (Zebrowitz, 1997). Indeed, the face serves as the source for most of our inferences and expectations about other people’s thoughts and behaviour (e.g., Perrett, 2010; Zebrowitz, 1997). Additionally, people automatically infer others’ traits (e.g., agreeableness, competence, and trustworthiness) when viewing their faces (Penton-Voak, Pound, Little, & Perrett, 2006; Rule & Ambady, 2011). These first impressions form very rapidly and are consistent across judges (Bar, Neta, & Linz, 2006). Thus, to best understand how nationality affects interpersonal interaction, I focused on face perception in the current research.

To date, no research has combined the findings and ideas from work on face perception, ingroup favouritism, and nationality. Synthesizing and expanding upon these findings to investigate the effect of nationality on perceptions of national ingroup and outgroup members’ faces serves to provide useful information about the malleability of the cognitive and perceptual systems, the strength of nationality as an ingroup, as well as an expansion of ingroup favouritism findings to an ingroup of particular importance. Nationality is a unique group membership in many ways,
and exploring whether its ingroup favouritism effects are comparable to that of other group memberships has the potential to inform whether previous ingroup favouritism findings apply to all ingroups. Furthermore, exploring nationality’s effects on perception when viewing others’ faces has important implications for interactions with others in our increasingly globalized world.

2 The Current Research

2.1 Measures and studies

To assess how people might be perceived and remembered based on their nationalities, I randomly assigned faces to be presented with national flags. These pairings aimed to form automatic associations between the two stimuli (as with spontaneous trait inferences, see Todorov & Uleman, 2002). Each participant saw randomly-determined face-flag pairings and then completed a recognition memory task for the faces before proceeding to evaluate the faces on a variety of traits. I then compared their performance on the memory task and their scores for each of the traits for the Canadian-paired (ingroup) and foreign-paired (outgroup) faces to test for ingroup favouritism in their recognition and evaluation.

Because previous research has indicated that stronger identification with the ingroup leads to greater ingroup favouritism (Van Bavel & Cunningham, 2012), and that national identification can relate to nationalism (Mummendey et al., 2001), I tested whether nationalism moderated ingroup favouritism. I therefore measured participants’ degree of nationalism in the first study and manipulated their nationalism levels in the second study. In the third study, I also tested whether nationality produced greater ingroup favouritism than another, weaker changeable group membership: university affiliation. I thus compared the memory effects of randomly pairing faces with national flags and pairing faces with university emblems.

2.2 Predictions

I hypothesized that faces randomly assigned to the Canadian flag (the national ingroup) would be evaluated more positively and recognized more accurately than faces assigned to other nationalities (the outgroup). I anticipated that this pattern would be stronger among participants
scoring higher in nationalism. Furthermore, if nationalism were manipulated (as in Study 2), 
ingroup favouritism effects of nationality should also change. Finally, I hypothesized that 
nationality is a more important group membership than other changeable group memberships, 
such as university affiliation, and would therefore lead to stronger ingroup favouritism.
Chapter 2

Study 1

In Study 1, I sought to determine whether participants would evaluate own-nationality faces more positively, and remember these faces better than other-nationality faces. I also tested whether participants’ nationalism might moderate any ingroup-outgroup differences in their memory and evaluations.

3 Method

3.1 Participants

A power analysis assuming the typical effect size in social psychology (r = .21; Richard, Bond, & Stokes-Zoota, 2003) revealed that at least 73 participants should be recruited to achieve 95% power. Accordingly, I recruited 75 University of Toronto students to complete the 20-min study for course credit. All participants were Canadian citizens.

I removed the data of 6 participants who had indicated dual citizenship with Canada and the United States, United Kingdom, Germany, or France (as these participants had multiple national ingroups used in the study), as well as 7 participants who said they recognized some of the faces used in the study, resulting in 62 participants in total (M_{age} = 19.46 years, SD = 2.35; 40 female, 20 male, 2 other) and 91% power. Note that the results reported below do not meaningfully differ if I include these participants in the analyses.

3.2 Stimuli and measures

3.2.1 Face-flag pairings

To reflect the changeable nature of nationality, I randomly paired 50 (25 male and 25 female) standardized greyscale images of Caucasian faces posing neutral expressions with one of five national flags: Canadian, American, British, French, and German. Thus, the nationality pairings varied between participants, much as a person’s nationality may vary in his or her lifetime. The
faces were obtained from the University of Toronto Social Perception and Cognition Lab’s database, comprised of images of participants in the lab, most of whom are undergraduate students. I chose these flags due to the ethnic and cultural similarities between the nations to ensure that the face-flag pairings would not look suspicious. The pairings differed for each participant, and participants viewed the stimulus pairs in random order.

3.2.2 Recognition memory test

To test memory for the faces, I showed the original 50 face images (this time, without their paired flags) along with 50 novel faces (also Caucasian and evenly split by sex) to the participants one-by-one via computer, asking them to indicate whether they had seen each face before.

3.2.3 Face evaluations

After the memory test, participants rated the faces on likability, trustworthiness, and aggression in three separate, randomly-ordered blocks. In each block, they viewed the 50 original faces in random order for one second, followed by the question “How likable [trustworthy, aggressive] is this person?” with a response scale ranging from 1 (not at all) to 7 (very much).

3.2.4 National bias questionnaire

I modified the nationalism, patriotism, and internationalism scales from Kosterman and Feshbach (1989) to assess participants’ level of national bias. The scales were modified simply by replacing references to the United States with references to Canada (e.g., I changed “The fact that I am an American is an important part of my identity” to “The fact that I am a Canadian is an important part of my identity”). Participants indicated their agreement with each statement on the questionnaire from 1 (strongly disagree) to 5 (strongly agree). The nationalism scale assessed views of Canadian superiority, and included statements such as “Other countries should try to make their governments as much like ours as possible,” whereas the patriotism scale measured national pride (e.g., “I am proud to be Canadian”), and the internationalism scale assessed feelings of international solidarity (e.g., “We should teach our children to uphold the welfare of all people everywhere even though it may be against the best interests of our own country”).
3.3 Procedure

After participants read that they would see people’s faces next to images of their nationalities, they viewed each random face-flag pairing on a computer screen for 1000 ms, followed by a string of X’s serving as a fixation point and pause between stimuli for 500 ms. After viewing all of the faces, participants completed a 3-min filler word search task to clear their working memory before continuing on to the memory test for the faces. Participants then completed another filler word search before evaluating the faces on their likability, aggression, and trustworthiness in random order, as described above. I instructed the participants to respond as quickly as possible according to their first impressions. Last, participants completed the national bias questionnaire and answered demographic questions assessing their gender, age, ethnicity, nationality, number of years lived in Canada, and years of Canadian citizenship.

4 Results

For recognition memory of Canadian- and foreign-paired faces, I analyzed the data using the signal detection statistics $d'$, an index of participants’ accuracy, and $c$, which measures response bias (Green & Swets, 1966; Macmillan & Creelman, 2005). Correctly recognized faces were treated as hits, whereas incorrectly recognized foils were treated as false alarms, generating $d'$ and $c$ values for each of the target groups (Canadian and foreign), see Table 1. For the likability, aggression, and trust ratings, I calculated the average scores for the foreign- and Canadian-paired faces for each participant. In order to assess national ingroup and outgroup differences, I then compared scores for the Canadian-paired faces and the foreign-paired faces using paired $t$-tests for each of the four dependent variables, Bonferroni correcting for multiple comparisons ($\alpha = .0125$).

The first $t$-test revealed that memory for Canadian-paired faces ($M = 0.87, SD = 0.59$) differed significantly from that for foreign-paired faces ($M = 0.69, SD = 0.49$), $t(61) = 2.91, p = .005, r_{\text{effect size}} = .35$, indicating that participants had better recognition memory for Canadian-paired than foreign-paired faces. Subsequent paired $t$-tests showed that differences in evaluations of Canadian-paired and foreign-paired faces on likability, $t(61) = 1.84, p = .07, r_{\text{effect size}} = .23$, aggression, $t(61) = -0.87, p = .39, r_{\text{effect size}} = .11$, and trustworthiness, $t(61) = 1.51, p = .14, r_{\text{effect size}} = .23$,
size = .19, were nonsignificant, although the means were directionally consistent with the hypothesis, see Table 2.

Next, to test whether national bias related to the differences in memory and evaluation for the Canadian- versus foreign-paired faces, I calculated a difference score for each dependent variable (Canadian – foreign) and regressed each difference score onto the three national bias scale scores (patriotism, nationalism, internationalism) in separate models. Of these, only patriotism marginally predicted the aggression difference score, $B = .21, SE = .10 t(55) = 2.16, p = .04$, such that higher patriotism predicted greater aggression ratings for the Canadian-paired versus foreign-paired faces, see Figure 1. No other variables showed significant relationships, all $t’ s < 1.15$, all $p’ s > .15$.

5 Discussion

In this study, participants remembered the faces of ostensible national ingroup members more accurately than the faces of supposed national outgroup members. Canadian participants recognized faces randomly paired with the Canadian flag better than they did faces paired with flags of other nations. This observation that simply pairing a face with a flag for one second creates a nationality-based ingroup favouritism effect for face memory provides further evidence of the malleability of the cognitive system, as people’s memory adjusts to accommodate arbitrary and changeable group memberships indicated only briefly. Because the faces were randomly paired with flags across participants, the results not only illustrate that a single signal of a person’s nationality affects how he or she is remembered, but that the same person will be recognized more accurately if he or she is thought to belong to one’s national ingroup. This has implications for interactions in international contexts – for example, immigrants may wish to avoid labelling themselves with their original nationality in order to possibly benefit from national ingroup memory advantages.

Although the participants’ trait evaluations did not differ according to their alleged nationality, the means indicated that the national ingroup was rated more favourably than the national outgroup. That ingroup favouritism emerged for memory but not for trait evaluations is not entirely surprising, given that such evaluations rely less on encoding information about the target
person than a response to immediate visual processing of the face. Specifically, recent work suggests that individuals prioritize processing their immediate visual percepts over the retrieval of information encoded in memory (e.g., Rule, Slepian, & Ambady, 2012; Rule, Tskhay, Freeman, & Ambady, 2014). Because I instructed the participants here to rate the faces as quickly as possible, they likely based their evaluations on the faces rather than their semantic knowledge about them (as in Rule et al., 2014).

Unexpectedly, national bias did not significantly relate to nationality differences in memory or trait evaluations with one exception: patriotism positively predicted aggression difference scores. The direction of this relationship is particularly interesting, as those with lower patriotism tended to rate alleged foreign faces as more aggressive than alleged Canadian faces, whereas those high in patriotism showed the opposite pattern. The direction of the relationship might be explained by a sense of security in one’s group that may be associated with feelings of patriotism. That is, perhaps those low in patriotism do not feel secure in their ingroup and therefore derogate the outgroup, whereas those high in patriotism feel secure enough in their ingroup to be able to be critical of the ingroup. This feeling of security might also be explained in terms of a need to belong, as previous research has demonstrated that those with a high need to belong show greater ingroup favouritism (Van Bavel et al., 2012). Patriotism may simply be indicative of feelings of belonging, so those who feel they do not belong in the national ingroup (and therefore have a high need to belong) show greater ingroup favouritism.

The absence of additional relationships with national bias suggests that perhaps Canadian national biases are not very strong. Indeed, participants’ scores for nationalism were particularly low ($M = 2.76, SD = 0.68$). To further explore the potential influence of national bias on ingroup favouritism, I therefore manipulated national bias in Study 2.
Chapter 3

Study 2

To clarify the role that national bias might play in the nationality-based ingroup favouritism that I observed for recognition memory in Study 1, I tested whether manipulating participants’ levels of nationalism might affect their memory and trait evaluations for own- and other-nationality faces in Study 2. In addition, I also tested whether belonging and essentialism might relate to nationality-based ingroup differences and national bias. Essentialism has been linked to regional ingroup bias (e.g., Western Europe vs. Eastern Europe; Keller, 2005), and could therefore play a role in national ingroup bias, and previous research has demonstrated that those with a high need to belong show greater ingroup favouritism (e.g., Van Bavel et al., 2012). Thus, I hypothesized that those scoring higher in essentialism and in belonging would show greater Canadian-foreign differences in memory and trait evaluation.

6 Method

6.1 Participants

Based on the results of a power analysis anticipating the mean effect size in social psychology ($r = .21$; Richard et al., 2003), I recruited 150 (75 in each of the two conditions) University of Toronto undergraduates to achieve 95% power in each condition. All participants were Canadian citizens and received course credit in exchange for their participation in the 30-min study.

I excluded 3 participants who indicated that they recognized a face used in the study, as well as 15 who were dual citizens of Canada and any of the non-Canadian countries used in the study. This resulted in 60 participants ($M_{\text{age}} = 19.31$ years, $SD = 1.99$; 14 male, 44 female, 1 other, 1 unknown) and 91% power in the increased nationalism condition and 72 participants ($M_{\text{age}} = 19.97$ years, $SD = 3.63$; 16 male, 56 female) and 95% power in the decreased nationalism condition.
6.2 Stimuli and measures

6.2.1 Nationalism manipulation

I manipulated nationalism by asking participants to read a paragraph either focusing on the greatness of Canada compared to other nations and expressing pride in Canadian citizenship, or on the arbitrary nature of national boundaries and expressing pride in internationalism (see Appendix). The results of a pilot study showed that reading these paragraphs resulted in increased ($M = 3.01$, $SD = 0.59$) and decreased ($M = 2.70$, $SD = 0.51$) nationalism scores compared to a control condition ($M = 2.75$, $SD = 0.55$), respectively.

6.2.2 Face-flag pairings, recognition memory test, face evaluations

These three measures were the same as in Study 1.

6.2.3 National bias questionnaire

The national bias questionnaire was the same as in Study 1, with one addition. As well as measuring patriotism, nationalism, and internationalism, the questionnaire assessed essentialism. In a pilot study, I measured biological essentialism using a scale from Keller (2005). However, the relationship between nationalism and biological essentialism that emerged was unclear (biological essentialism increased compared to the control for both the decreased nationalism and increased nationalism conditions), prompting me to construct a more specific measure of essentialism – national essentialism – for use in this study (see Appendix).

6.2.4 Belonging measure

I assessed participants’ feelings of security and belonging in their national ingroup with two questions (i.e., “How secure do you feel in your identity as a Canadian?” and “In a group of Canadians, how much do you feel you belong?”) to which participants responded on a scale from 1 (not at all) to 7 (very), followed by the Need to Belong scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013).
6.3 Procedure

I randomly assigned participants to read the nationalism-increasing or nationalism-decreasing paragraph. Following this, the procedure followed that of Study 1, with the added essentialism and belonging measures preceding the demographic questions.

7 Results

For the two conditions, I compared participants’ trait evaluation scores and $d'$ values for memory for the Canadian- and foreign-paired faces in paired t-tests, Bonferroni correcting for multiple comparisons ($\alpha = .0083$). In the increased nationalism condition, recognition memory for Canadian-paired faces ($M = 0.87, SD = 0.62$) was marginally better than that for foreign-paired faces ($M = 0.67, SD = 0.51$), $t(59) = 2.32, p = .02, r_{\text{effect size}} = .29$, paralleling the results of Study 1 (see Table 3). In the decreased nationalism condition, memory for allegedly Canadian ($M = 0.82, SD = 0.57$) and foreign faces ($M = 0.75, SD = 0.42$) did not differ, $t(71) = 1.35, p = .18, r_{\text{effect size}} = .16$ (see Table 4). In both conditions, there were no significant differences between allegedly Canadian and allegedly foreign faces in ratings of likability, aggression, or trustworthiness, all $t$’s < 1.09, all $p$’s > .28, replicating the results of Study 1.

Next, I ran a multiple linear regression to determine whether belonging, essentialism, or national bias predicted Canadian-foreign differences in memory for the increased nationalism condition. This revealed no significant predictors, all $t$’s < 1.89, all $p$’s > .06.

I then directly compared the two conditions in terms of their memory scores and nationalism scores. I computed a mixed-model ANOVA with condition (decreased or increased nationalism) as the between-subjects factor and face pairing (Canadian or foreign) as the within-subjects factor. Surprisingly, this revealed no significant interaction, $F(1, 130) = 1.63, p = .20, r_{\text{effect size}} = .11$, but did reveal a main effect of face pairing, $F(1, 130) = 7.10, p = .009, r_{\text{effect size}} = .23$. I next used an independent-samples t-test to test differences in nationalism between the two conditions, which revealed no significant difference, $t(127.63) = 1.41, p = .16, r_{\text{effect size}} = .12$, although the means were in the expected direction (increased $M = 2.98, SD = 0.08$; decreased $M = 2.83, SD = 0.08$).
8 Discussion

The results of the increased nationalism condition paralleled those of Study 1, indicating that the relationship between flag pairing and face memory is somewhat robust. Participants remembered faces paired with Canadian flags with marginally greater accuracy than those paired with foreign flags, providing further evidence that a one-second indication of nationality affects memory for a face, such that members of the national ingroup are remembered more accurately than national outgroup members. Furthermore, none of the predicted moderators, including essentialism and belonging, showed any predictive effects for these Canadian-foreign memory differences. This is in contrast to previous findings for ingroup favouritism (e.g., Van Bavel et al., 2012), suggesting that perhaps the national ingroup is itself too strong for variables such as belonging and bias to affect its relationship with ingroup and outgroup person memory. As in Study 1, no evidence of Canadian-foreign differences in trait ratings emerged, further indicating that nationality information stored in memory may not affect rapid first impressions.

No differences in either memory or trait evaluations emerged in the decreased nationalism condition, however. Surprisingly, a direct comparison of the two conditions for both memory and nationalism scores revealed no differences between the conditions. This suggests that despite the nationalism manipulation failing to manipulate participants’ levels of nationalism meaningfully, it may have eliminated memory differences from the decreased nationalism condition, although the two conditions nonetheless did not differ substantially. As this study did not include a control condition, it is difficult to make conclusions, but speculating based on the results of Study 1, it appears that both nationalism manipulations decreased the size of the memory effect, based on a comparison of the effect sizes. This suggests that the nationality-based memory bias may indeed be malleable, although nationalism does not appear to drive this ingroup favouritism, as it was not predictive of Canadian-foreign memory differences. Thus, the results of this study point toward the possibility of ameliorating national ingroup favouritism in person memory, but the precise manner in which this favouritism can be mitigated needs to be explored in future work.

Having found evidence for a national ingroup favouritism effect on memory in two studies, the question of the uniqueness of this effect still remains. That is, compared to another changeable
group membership, how strong is the effect of nationality on memory for ingroup and outgroup members?
Chapter 4

Study 3

The purpose of Study 3 was to compare the ingroup favouritism effect of nationality to that of another changeable group, university affiliation, to determine the relative strength of the national ingroup and assess its uniqueness. Studies 1 and 2 provided evidence for nationality labels affecting person memory, and Study 3 aimed to compare this national ingroup favouritism to potential ingroup favouritism that might emerge for memory of university ingroup and outgroup members.

9 Method

9.1 Participants

In order to obtain a more specific estimate than the average effect size in all of social psychology, I calculated the average effect size across various studies on ingroups and memory. Anticipating this effect size ($r = .24$), I recruited 130 participants (65 per condition) to achieve 80% power in comparing the two conditions. I set power lower than in the previous studies, as I ran this study during the summer with a smaller participant pool available. Participants received course credit or compensation of $10/hr in exchange for their participation in the 10-min study.

I excluded 7 total participants from both conditions who indicated that they had recognized a face in the study, as well as 2 participants who reported dual citizenship of Canada and any of the non-Canadian countries in the flag condition. This resulted in 77% power and $N = 60$ ($M_{\text{age}} = 21.7$ years, SD = 5.40; 16 male, 43 female, 1 unknown) for the flag condition and $N = 61$ ($M_{\text{age}} = 19.62$ years, SD = 1.66; 15 male, 46 female) for the university emblem condition.

9.2 Stimuli and measures

9.2.1 Face-flag pairings

Randomized pairings of faces and flags were the same as in Studies 1 and 2.
9.2.2 Face-university pairings

Similar to the face-flag pairings, the 50 faces were randomly paired and displayed with one of five university emblems: University of Toronto, York University, Ryerson University, McGill University, and Queen’s University. Prior to viewing the pairings, each emblem was displayed on the screen next to the name of its associated university to ensure that participants were familiar with the meaning of the emblems.

9.2.3 Recognition memory test

The memory test was the same as in the previous two studies.

9.2.4 Belonging measure

Participants were asked how secure they felt in their identity as either a Canadian or as a student at the University of Toronto, as well as how much they felt they belonged in that group. These questions were followed by the Need to Belong scale.

9.3 Procedure

Canadian citizens and University of Toronto students were recruited to participate in the study and asked upon entering the lab about their citizenship and university affiliation. Those who were Canadian citizens viewed the face-flag pairings, whereas those who were University of Toronto students viewed the face-university pairings. Participants who fit both criteria were randomly assigned to one of the two conditions. After this, the procedure was the same for the two groups of participants: they completed a filler word search task before the memory test, which was followed by the belonging measure and demographic questions. Last, participants answered four questions about the degree to which nationality and university affiliation are hereditary and biologically determined, and the degree to which each is arbitrary and changeable, responding on a scale ranging from 1 (not at all) to 7 (very). These questions replaced the essentialism scale used in Study 2 in order to provide more a succinct comparison of participants’ essentialist beliefs regarding nationality and university affiliation.
9.4 Results

As in the previous two studies, I analyzed participants’ recognition memory with the signal detection index of accuracy, $d'$. I compared the accuracy scores for Canadian-paired and foreign-paired faces in a paired $t$-test for the flag condition, Bonferroni correcting for multiple comparisons ($\alpha = .025$). This revealed a marginal difference, such that Canadian-paired faces ($M = 0.78$, $SD = 0.56$) were more accurately remembered than the foreign-paired faces ($M = 0.67$, $SD = 0.40$), $t(59) = 1.83, p = .07, r_{effect size} = .23$, paralleling the results of the previous studies (see Table 5). Next, I computed a paired $t$-test for the university emblem condition, finding no differences in memory for faces paired with the University of Toronto (U of T) emblem ($M = 0.67$, $SD = 0.63$) as compared to non-U of T-paired faces ($M = 0.65$, $SD = 0.37$), $t(60) = 0.27, p = .79$, $r_{effect size} = .03$ (see Table 6).

I next ran a multiple linear regression to test whether belonging or beliefs about the arbitrary or biological nature of nationality and university affiliation predicted recognition memory differences for Canadian- and foreign-paired faces. There were no significant predictors, all $t$’s < 1.47, all $p$’s > .14. Analogous analyses for the university emblem condition similarly revealed no predictors for differences in memory for U of T-paired and non-U of T-paired faces, all $t$’s < 0.83, all $p$’s > .41.

Last, I compared the Canadian-foreign memory differences to the U of T-non-U of T memory differences in a mixed-model ANOVA with condition (flag or university emblem) as the between-subjects factor and face pairing (ingroup or outgroup) as the within-subjects factor. No significant interaction emerged, $F(1, 119) = 1.04, p = .31, r_{effect size} = .10$, however, the means were in the expected direction, such that the flag condition showed greater differences ($M_{difference} = 0.11, SD = 0.46$) than the university emblem condition ($M_{difference} = 0.02, SD = 0.52$), and the effect size for the flag condition ($r_{effect size} = .23$) was substantially larger than in the university emblem condition ($r_{effect size} = .03$). Furthermore, participants in both conditions rated nationality as more biologically determined and less arbitrary than university affiliation (see Table 7).
9.5 Discussion

Although only marginally significant in this sample, the pattern of effects with regard to Canadian-foreign recognition memory differences was the same as in the previous two studies, demonstrating a nationality-based ingroup favouritism effect for face memory. For the university emblem condition, no memory differences emerged, indicating that university affiliation is not a strong enough group membership to generate an ingroup favouritism effect in memory, unlike nationality. Nationality’s relative strength suggests that it might, at least under some circumstances, produce stronger ingroup favouritism effects than group memberships that are neither arbitrary nor changeable, such as ethnicity, and could therefore serve as a superordinate group membership to overcome other group differences within a nation. Additionally, participants’ ratings indicated that nationality was perceived as less arbitrary and more biologically determined than university affiliation, suggesting that nationality’s representation is qualitatively different than that of other changeable group memberships.
Chapter 5

Aggregated Results

In order to gain a better picture of the robustness of the national ingroup favouritism effect on face memory, I conducted a fixed-effects meta-analysis of Study 1, both conditions of Study 2, and the flag condition of Study 3. The weighted mean effect size was $r = .26$, 95% CI $= [.13, .39]$, with $z = 4.05$, exceeding the critical value of 1.96 at $\alpha = .05$, indicating that the mean effect size was significantly above zero.
Chapter 6

General Discussion

Together, the results of these three studies provide further evidence of the malleability of the cognitive system, as well as evidence for the relative strength of nationality compared to another changeable group membership in producing ingroup favouritism effects in person memory. Pairing a face with an image of a flag for one second produced an ingroup favouritism effect for recognition memory, such that Canadians remembered faces paired with Canadian flags more accurately than faces paired with foreign flags. As the faces and flags were randomly paired together, the results indicate that the same face is more likely to be remembered if it is associated with one’s national ingroup than if it has been paired with a national outgroup. This has implications for the appropriateness of nationality labels in certain contexts, as memory advantages for national ingroup members may not foster fair environments.

Importantly, these data show that the cognitive system accommodates simple nationality labels when perceiving others. This provides further evidence for the importance of group memberships to cognition, building upon previous work in ingroup favouritism and replicating patterns found with other groups (e.g., race; Sporer, 2001). Importantly, however, in these studies, memory differed for targets who were simply labelled as members or non-members of an important group, whereas previous research has focused on either actual group membership (e.g., Rule et al., 2007) or minimal groups (e.g., Van Bavel & Cunningham, 2012). This work thus provides a bridge between these two areas of ingroup favouritism research.

Furthermore, these studies expand upon the nationality literature, providing yet another area in which nationality affects cognition. Previous research has primarily focused on nationality’s effect on attitudes and subsequent behaviour, with little work in the area of person perception. The studies reported here tie together the areas of person perception and nationality, demonstrating a relationship between nationality labelling and person memory. This relationship could suggest the possibility of behavioural effects, which should be investigated in future work to better understand how nationality affects not only our perceptions of others, but also our interactions with them.
10 Limitations and Future Directions

These studies focused only on the relationship between memory and target nationality for Canadian participants. Countries show varying levels of national pride (e.g., presence of national symbols such as flags) and may differ in their cultural valuation of citizenship, and it is possible that factors such as these may affect nationality-based ingroup favouritism. The national ingroup advantage in memory found with Canadian citizens may not necessarily be generalizable to all nationalities, necessitating running similar studies with participants of various nationalities and comparing the ingroup favouritism effects across participant nationality. Similarly, the countries used in these studies (Canada, the United States, the United Kingdom, Germany, and France) were all fairly similar culturally. It would be informative to run studies with foreign nations differing more drastically from the national ingroup, as it seems plausible that the more foreign a nation seems compared to one’s own, the greater the ingroup favouritism will emerge.

Future research could also conduct better tests of nationality’s strength as an ingroup. Study 3 compared ingroup favouritism effects for nationality and university affiliation, another changeable ingroup. However, university affiliation may not be the most informative comparison group – it is substantially more changeable than nationality and is likely a group with which its members identify much more weakly. Thus, comparisons with other strong and changeable group memberships could be made in future work. Furthermore, participants in both conditions of this study indicated that they considered nationality to be significantly more biologically determined and less arbitrary than university affiliation. It may be therefore be of interest to compare nationality with another group membership that may also be represented in this way: religion. Like nationality, one’s religion is often determined by the religion of one’s family, but is also changeable. Religion may therefore be a group membership that is represented in a manner very similar to that of nationality, and may be comparably important to people’s identities, making a comparison of their effects on person memory potentially very informative.

Similarly, comparison of the ingroup memory advantage for the national ingroup to that of strong but unchangeable group memberships, such as ethnicity, is an area worth exploring. It would be of interest, for example, to pair a mixture of Caucasian and East Asian faces with Canadian and foreign flags, recruiting Canadian participants of these two ethnicities. Ethnicity or
nationality could be made salient to participants via a priming procedure prior to presenting the faces, and memory effects for participants’ ethnic ingroup and national ingroup could be compared in each condition.

Finally, this study used faces whose actual nationalities were not known. Future research could better understand the strength of the memory advantage for the national ingroup found in these studies by comparing memory for the faces of those who are actually members of one’s national ingroup (as in Doty, 1998) with those who are simply labelled as members of the ingroup. For example, a sample of faces of Canadian and American citizens could be randomly paired with either the Canadian or American flag and memory for each grouping could then be compared to understand the relative strength of nationality labels and actual nationality (which preliminary data have shown to be visible in the face; Bjornsdottir & Rule, 2015).

11 Conclusion

Across three studies, results demonstrated that those who are labelled as part of the national ingroup are remembered more accurately than those who are labelled as the national outgroup. The manipulation of this ingroup favouritism effect requires further examination, but it is clear that the pattern is a robust one, as well as stronger than that for other changeable ingroups. Overall, nationality appears to be a group membership that is mentally represented in a unique manner, and exploring its effects on social cognition remains an important area of investigation.
References


**Tables and Figures**

Table 1

*Signal Detection Values for Recognition Memory in Study 1*

<table>
<thead>
<tr>
<th>Stimuli</th>
<th>Hits</th>
<th>False alarms</th>
<th>$d'$</th>
<th>$SD$</th>
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<td>.19</td>
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Table 2

*Descriptive Statistics for Trait Evaluations in Study 1*

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<th>Foreign-paired faces</th>
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<td></td>
<td></td>
<td>$M$</td>
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Table 3

*Signal Detection Values for Recognition Memory in the Increased Nationalism Condition in Study 2*

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Table 4

Signal Detection Values for Recognition Memory in the Decreased Nationalism Condition in Study 2

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<tr>
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Table 5

*Signal Detection Values for Recognition Memory in Flag Condition of Study 3*

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Table 6

*Signal Detection Values for Recognition Memory in University Emblem Condition of Study 3*

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Table 7

Results of Paired t-tests Comparing Ratings of Nationality and University Affiliation as Biologically Determined and Arbitrary

<table>
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<td>59</td>
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<td>59</td>
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<tr>
<td>University emblem condition</td>
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<td>1.55</td>
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</table>

Note. * p ≤ .05, *** p ≤ .001
Figure 1. Relationship between patriotism scores and Canadian-foreign differences in aggression ratings of faces in Study 1.
Appendix

12 Nationalism Manipulation

12.1 Nationalism decrease

Please read the following argument: As globalization continues, national boundaries become increasingly arbitrary. People of varying nationalities frequently live within the same borders. This is particularly obvious in a diverse city such as Toronto - immigrants from all different nations live here. Not only are national boundaries arbitrary due to the movement of people between countries, but also due to the alliances that countries form with each other. For example, moving from one nation to the next is seamless within the European Union, where there are no real borders and each country functions much the same. The relationship between Canada and the US is very similar, being the largest international border in the world and the most peaceful. Lastly, with globalization, cultures in different nations are becoming more and more similar, highlighting how few differences there are between people in different countries. We should truly be proud to be citizens of the world.

12.2 Nationalism increase

Please read the following argument: Canada is a great nation. Our country's contribution to international affairs, as well as our domestic policies, are unparalleled in many ways. Canada serves as a peacekeeper around the world and is not a war-mongering nation like others are. We do more than our fair share in contributing to the welfare of the world. Canada is at the peak of scientific discovery and innovation - for example, the Canadarm at the International Space Station represents a huge contribution to the scientific community. Within the country itself, the standard of living is high and opportunities for citizens are abundant. We should be truly proud to be Canadian.
13 National Essentialism Scale

1. I think that being part of a "nation" means sharing common biological features with other members of the group.
2. I think nationality is determined more by family history than legal citizenship.
3. Nationality is arbitrary. (R)
4. I believe that the country where a person is born, not where they currently live, is their true nationality.
5. Speaking the language of a nation is important to belonging to that nationality.
6. Following the customs of a nation is important to belonging to that nationality.
7. The characteristics of a country's residents determine what it means to be a member of that nationality. (R)
8. Simply living in a country makes a person a part of that nation. (R)

Items marked with (R) are reverse-scored.