Citizens of the World: National Stereotypes Do not Affect Empathic Response in the
Presence of Individuating Information

MohammadHasan Sharifian*¹, Javad Hatami¹, Seyed Amir Hossein Batouli², and Mohammad
Mahdi Fathian Boroujeni³

¹ Department of Psychology, Faculty of Psychology and Education, University of Tehran,
Tehran, Iran

² Department of Neuroscience and Addiction Studies, School of Advanced Technologies in
Medicine, Tehran University of Medical Sciences, Tehran, Iran

³ Department of Psychology, Faculty of Psychology and Education, Kharazmi University, Karaj,
Iran

*Corresponding author information: Department of Psychology, Faculty of Psychology and
Education, University of Tehran, Kardan St., Jalal Al-e-Ahmad Ave., Tehran, Iran, (e-mail:
hasan.sharifian@ut.ac.ir).

word count: 5711

This manuscript is now published in International Journal of Psychology
<https://doi.org/10.1002/ijop.12807>

Abstract

Stereotyping is defined as generalizing an attribute to a whole group and overlooking individual differences. In this study, we investigated whether Iranians' stereotypes of nations affected their empathy for the citizens of those nations. First, in a pilot study we explored common national stereotypes by using the stereotype content model (SCM) based on which, six countries with different perceived warmth and competence scores were selected as the nationality of the protagonists of the vignettes in our experiment. In the next phase, twenty-one participants were asked to rate the degree of sadness associated with each vignette in an fMRI scanner. The results showed no significant differences in brain activity while participants were exposed to scenarios in which negative events befell people from different nations. This may be due to the individuation of victims by providing personal information about them.

Keywords: Stereotypes Empathy Parochial Empathy Social Categorization
fMRI

Citizens of the World: National Stereotypes Do not Affect Empathic Response in the Presence of Individuating Information

Studies in the field of social psychology have provided evidence regarding the influence of group membership and intergroup relations on perception of others. Allport (1954) famously noted that “The human mind must think with the aid of categories. Once formed, categories are the basis for normal prejudgment. We cannot possibly avoid this process. Orderly living depends upon it”(p. 20). The tendency of humans to categorize others based on their group membership is the basis of different perceptual biases such as *outgroup homogeneity* and *ethnocentrism* (Brauer, 2001). Investigations in the area of social neuroscience have documented specific patterns of brain activity when people perceive in-group and out-group members (Gutsell and Inzlicht, 2010). Willadsen-Jensen and Ito (2006) asked a sample of white people to view pictures of Whites, Blacks, and Asians in an Event-Related Potential (ERP) study and found that images of non-white people elicited a larger P200 component, suggesting a higher allocation of attentional resources for perceiving racial out-groups. Evidence from functional Magnetic Resonance Imaging (fMRI) studies has also revealed specific brain activation patterns when participants are exposed to out-group members (Cunningham et al., 2004).

Among many other constructs, empathy can also be affected by group membership, referred to as *parochial empathy* which implies a higher level of empathy for one’s own group (Bruneau, Cikara, and Saxe, 2015). Behavioral and neuroimaging evidence suggests that people

around the world display a higher level of empathy and prosocial behavior toward in-group members (Hatami, Nejat, and Karamali, 2016; Levine, Prosser, Evans, and Reicher, 2006). Levine et al. (2006) reported that supporters of Manchester United football club were less likely to help an injured jogger with a Liverpool shirt (i.e., the traditional rivals) compared to another jogger with a Manchester United or an unbranded shirt. In an fMRI study, Xu, Zuo, Wang, and Han (2009) reported that Asians and Caucasians showed greater activity in the anterior cingulate cortex (ACC; a region involved in pain empathy) while watching an individual in pain from their own racial in-group. Similarly, Avenanti, Sirigu, and Aglioti (2010) showed that a sample of white participants perceived a higher level of pain while watching a needle penetrating the hand of another white but not black individual.

Intergroup relations, however, are more complex and thus require more sophisticated models than the ingroup-outgroup dichotomy. Stereotype Content Model (SCM; Fiske, Cuddy, Glick, and Xu, 2002) proposes that outgroups differ in their perceived warmth and competence. The attributed warmth (i.e., the intent of the target) and competence (i.e., the extent to which the target is able to act based on their intent) to a certain group can predict the perceiver's emotional and behavioral tendencies. In more detail, the attribution of high warmth and high competence, high warmth and low competence, low warmth and high competence, and low warmth and low competence elicits pride, pity, envy, and disgust in the perceivers, respectively. Harris and Fiske (2006) studied brain activity as a function of the level of warmth and competence associated with different groups and reported a lower activation of medial prefrontal cortex (mPFC) for disgust

targets, suggesting that they were seen as “less human” compared to other groups. In another study, Cikara and Fiske (2012) found that low warmth and high competence targets elicited a lower level of empathy, as measured by higher zygomatic muscle activity of participants while viewing an adverse event befalling envy targets.

As a social group, nations have received less attention in the social psychological studies of stereotypes and prejudice, relative to other social groups such as race and gender. Considering the role of social perception in various domains of behavior, the way we perceive other nations can influence our position on different policies. In the present study, we aimed to investigate the effect of national stereotypes on people’s empathy for citizens of other nations. Based on the literature, we hypothesized that nations with different perceived warmth and competence would elicit different levels of empathy. To this end, we explored the stereotypes regarding several nations first in a pilot study, and selected six countries as target nationalities. In a later fMRI phase, we then investigated the effect of those national stereotypes on empathy related neural activities in the brain.

Pilot Study

Methods

Participants

Sixty-six healthy university students (Age = 21.88 ± 4.80 , 40 females) participated in the pilot study.

Instruments

Stereotype Content Model (SCM)

Developed by Fiske et al. (2002), this questionnaire measures the stereotype content in two dimensions, namely warmth and competence. Questions about traits such as trustworthiness and honesty make up the warmth dimension which measures the intention of the target (Cronbach's $\alpha = .90$) and the competence dimension is comprised of questions about characteristics such as confidence, power, and intelligence (Cronbach's $\alpha = .94$), measuring the ability of the target group to act based on its intentions. SCM has two additional components, namely status (Cronbach's $\alpha = .89$) and competition (Cronbach's $\alpha = .67$) which are associated with competence and warmth, respectively. In the present study, the following questions were asked to measure warmth, competence, status, and competition:

Table 1. SCM questionnaire items.

Measure	Questions
Warmth	As viewed by Iranian society, how ... are the [target country] people? good-natured, honest, warm
Competence	As viewed by Iranian society, how ... are the [target country] people? capable, skillful
Status	As viewed by Iranian society, how prestigious are the jobs of the [target country] people? As viewed by Iranian society, how economically successful are the [target country] people? As viewed by Iranian society, how well-educated are the [target country] people?
Competition	As viewed by Iranian society, how much does special treatment given to [target country] make things more difficult for Iran? As viewed by Iranian society, how much do financial resources that go to [target country] take away the financial resources from Iran? As viewed by Iranian society, if [target country] gains power, how harmful is it to Iran?

Target countries were selected based on a preliminary study (Supplementary material 1).

The final list of countries included in the study is: Afghanistan, Canada, China, Emirates, England, France, Germany, Iran, Iraq, Israel, Japan, Lebanon, North Korea, Pakistan, Palestine, Qatar, Russia, Saudi Arabia, Switzerland, Syria, Turkey, United States, and Yemen.

Procedure

The final questionnaire which included 23 target countries and 204 questions was distributed among university students in Tehran. In order to minimize the social desirability effect, participants were asked to consider the collective viewpoint of the Iranian society instead of their own viewpoint while answering the questions.

Results

As shown in Figure 1, ratings of warmth and competence are significantly different for target countries. In addition to warmth and competence, we also explored the link between social structural variables (i.e., status and competition) and warmth and competence. Pearson's correlation analysis revealed a strong positive correlation between status and competence ($r = .914$, $p < .001$), as well as a strong negative association between competition and warmth ($r = -.804$, $p < .001$).

Figure 1. SCM map (mean warmth and competence ratings)

Based on these results, six countries from different locations on the SCM map were selected for the main study and a repeated-measure analysis of variance was performed to

determine whether there was a difference in perceived warmth and competence of these countries. The results showed that these countries significantly differed in terms of their perceived warmth, $F(4.475, 286.428) = 119.365, p < .001, \eta_p^2 = .651$, and competence, $F(4.072, 260.629) = 127.480, p < .001, \eta_p^2 = .666$ (Figure 2).

Figure 2. Mean warmth and competence ratings for the six selected countries

Discussion

The goal of this study was to explore the stereotypes associated with different nations among Iranian students. Using SCM, we found that there were different combinations of warmth and competence for target nations; some countries such as Russia, England, and United States elicited envy, while Japan and Canada elicited pride and Saudi Arabia ended up on disgust quadrant. Stereotypes for some other nations such as Palestine, Syria, Yemen, Israel, and the reference group (i.e., Iran) were less clear. There seems to be ambiguity and heterogeneity in Iranians' stereotypes of these countries. Furthermore, in line with previous SCM studies, we found social structural

variables to be associated with warmth and competence; status was positively linked to competence whereas an inverse relationship was found between competition and warmth. As suggested by Harris and Fiske (2006) and Cikara and Fiske (2012), low warmth groups elicit lower levels of empathy. This may be because warmth includes traits such as trustworthiness and honesty and lacking such traits could be a signal of bad intention in the target group. In our study, Saudi Arabia and Israel were perceived as the least warm countries. Based on previous studies, therefore, one might predict a lower empathy among Iranians for these countries. As a result, we selected the six countries of Palestine, Iran, Japan, Saudi Arabia, Israel, and the United States to be used as the nationality of the protagonists of the vignettes in the main study.

Main Study

Methods

Participants

Twenty-three Iranian university students participated in this study in exchange for monetary compensation. Two participants did not complete the study, and therefore the final sample included 21 individuals (9 men, 12 women, Mean age = 26.14 ± 3.66) which is comparable to the sample size in many fMRI studies (Szucs and Ionnidis, 2020). The inclusion criteria were being: 1) student, 2) right-handed, and 3) between 18-40 years of age. The exclusion criteria were: 1) history of head trauma, 2) long-term use of neurological medications, alcohol or drug abuse, 3) claustrophobia, 4) pregnancy, and 5) other standard MRI contraindications. Written consent was

obtained in the beginning of the experiment. All participants could withdraw from the experiment for any reason at any time after the start of testing.

Instruments

Interpersonal Reactivity Index (IRI).

Developed by Davis (1980), Interpersonal Reactivity Index (IRI) is a widely used measure for trait empathy and includes four subscales: perspective-taking (PT), empathic concern (EC), personal distress (PD), and Fantasy (FS). IRI has been translated into Farsi by Feizabadi, Farzad, and Shahraray (2007) who have reported the internal consistency of the four subscales as follows: PT = .68, EC = .68, PD = .71, and FS = .70.

Empathy Task

Ninety-seven short scenarios containing descriptions of events with neutral (e.g., going to work, shopping, preparing lunch) and negative (e.g., physical injury, losing a loved one, being robbed) content that may happen in everyday life were written. At this point, all the protagonists of the scenarios were Iranians, but care was taken not to include any culture-specific elements in the scenarios so that it was possible to use any of the scenarios for any target country. In a preliminary study, a group of 21 individuals (9 women, 12 men) rated the scenarios on a scale from 1 (least sad) to 10 (very sad). The scenarios with a mean score of above 7.5 (61 scenarios) or lower than 3 (27 scenarios) were selected for comparisons. Results showed that neutral and negative scenarios were significantly different from each other, $t(64.51) = 55.464, p < .001$, and from the middle point of the scale (5.5), neutral scenarios: $M = 1.62, t(26) = 42.159, p < .001$, and from

negative scenarios, $M = 8.39$, $t(61) = 36.045$, $p < .001$. Next, 14 scenarios (10 negative, 4 neutral) were assigned to each target country and the identity of the protagonists was changed accordingly. The final set included a total of 84 scenarios (60 negative and 24 neutral).

The face images of the protagonists were selected from *Chicago Face Database* (Ma, Correl, and Wittenbrink, 2015), *Face Research Lab London Set* (DeBruine and Jones, 2017), and *Emotional Face Database* (Heydari and Yoonessi, 2019). The names of the protagonists were selected by searching on the internet for popular names in each country.

The task consisted of 4 runs, each including 21 trials. Trials comprised of an image including the name, face image, and the flag of the country of each protagonist. These images were presented for 3 seconds. Next, a vignette showed up for 15 seconds and the participants were asked to rate how sad they felt when reading about the condition of the protagonist. Finally, a fixation cross was presented for a time between 3 to 7 seconds. The total scanning time was around 40 minutes (Figure 3).

Figure 3. Experimental design, Top: Timing of each trial, Bottom: Timing of the whole experiment, S = seconds.

Procedure

Participants were called one week before the experiment to complete an online survey which included questions regarding their demographic information, vision, and IRI questionnaire. On the day of the experiment, they were given information about the ethical approval of the study and were examined by a physician before entering the MRI scanner. They were also given instructions about the experiment and had their vision tested and corrected if required. MRI sessions began with the acquisition of structural images, followed by task presentation. After the experiment, participants were debriefed and compensated.

fMRI acquisition and data analysis.

Structural and functional brain scans were obtained using a Siemens Prisma 3T MRI scanner (Siemens, Erlangen, Germany) equipped with a 64-channel head coil at the National Brain Mapping Laboratory (NBML) in Tehran. At the beginning of the session, high-resolution T1-weighted structural images were obtained using T1-MPRAGE sequence (TR = 1800ms, TE = 3.53ms, TI = 1100ms, flip angle = 7°, voxel size = $1 \times 1 \times 1 \text{ mm}^3$, FOV = $256 \times 256 \text{ mm}^2$, matrix size = 256×256 , slice thickness = 1mm). Functional T2*-weighted images were acquired using echo-planar imaging sequence (EPI, TR = 3000 ms, TE = 30ms, flip angle = 90°, voxel size = $2.5 \times 2.5 \times 2.5 \text{ mm}^3$, FOV = $190 \times 190 \text{ mm}^2$, matrix size = 76×76 , slice gap = 2.75 mm). Forty-eight axial slices were acquired in each volume to cover the whole brain.

fMRI data were analyzed by using FMRIB Software Library (FSL; <http://www.fmrib.ox.ac.uk/fsl>) and fMRI Expert Analysis Tool (FEAT). The data for each participant was first

preprocessed in the following order: skull-stripping using Brain Extraction Tool (BET; Smith, 2002), head movement correction using MCFLIRT (Jenkinson, Bannister, Brady, and Smith (2002), slice-timing correction using Fourier-space time-series phase-shifting, co-registration of the functional images to the participant's anatomical images, normalization to Montreal Neurological Institute (MNI) standard atlas, smoothing the images using a Gaussian filter (FWHM=6), and removing the low-frequency drifts by applying a high-pass temporal filter of 100s.

First, overall differences between brain activations relevant to the negative and neutral conditions were calculated, irrespective of target country. Three regressors were defined in the analysis, corresponding to all negative, all neutral, and all negative > neutral conditions. The individual GLM analyses were performed by creating a boxcar function of the tasks (different conditions) against rest, being convolved with a canonical hemodynamic response function and its temporal derivatives. Accordingly, three contrasts of interest were defined in the analysis: one for the negative condition, one for the neutral condition, and one for negative > neutral condition. Group-Level analysis was performed using FMRIB's Local Analysis of Mixed Effects (FLAME; Beckmann, Jenkinson, and Smith, 2003) to determine the regions that were significantly activated in the three contrasts mentioned above. Statistical maps were thresholded so that the voxels that surpassed the criterion of $z > 2.3$ were shown as activated. The results were corrected for multiple comparisons using a False Discovery Rate (FDR) of $p < .05$.

Next, region of interest (ROI) analysis was carried out to compare the brain's empathic response for each target country. First, twelve regressors were defined, corresponding to six

negative conditions of the six countries, as well as their six neutral conditions. Overall 18 contrasts of interest were defined in this analysis: six for negative conditions, six for neutral conditions, and six for negative > neutral conditions of each country. This process was the same as the previous analysis (i.e., overall negative, neutral, and negative > neutral conditions). Based on previous studies on the neural underpinnings of empathy and stereotypes, six regions of interest including the right and left anterior insula (AI), right and left temporoparietal junction (TPJ), medial cingulate cortex (MCC), and medial prefrontal cortex (mPFC) were selected. Spherical masks (radius = 9 or 5 mm) were created around the peak voxel of ROIs, and average activity in each ROI was calculated for the negative > neutral condition in each country, using FSL's Featquery tool.

Results

Self-Report Data

Mean scores of participants on the four subscales of IRI are presented in table 2.

Table 2. Mean (SD) of scores on the subscales of IRI

Subscale	Men	Women	Total
Perspective Taking (PT)	26.55 (2.18)	25.83 (2.62)	26.14 (2.41)
Fantasy (FS)	28.22 (3.80)	25.41 (3.82)	26.62 (3.98)
Empathic Concern (EC)	26.44 (2.79)	27 (3.38)	26.76 (3.08)
Personal Distress (PD)	22.33 (2.24)	21.92 (4.14)	22.09 (3.39)

An independent t-test was performed on the subscales of IRI to compare men and women in terms of trait empathy. The results showed no significant differences between men and women in PT, FS, EC, and PD; PT: $t(19) = .669$, FS: $t(19) = 1.668$, EC: $t(19) = -.400$, PD: $t(19) = .272$, all $p\text{-values} > .05$.¹

Next, we compared the self-report empathy of participants while they were reading the negative vignettes in the scanner. Once again, no differences were found between men and women; $t(11.052) = -.955$, $p = .360$. In addition, self-report empathy for the six target countries were analyzed. The results were barely significant; $F(5,100) = 2.356$, $p = .046$, $\eta^2 = .11$, and the follow-up tests did not show any differences between the reported empathy for the six target countries. To examine the link between trait and self-report empathy, a Pearson's correlation analysis was performed between IRI subscales and the self-report empathy. Results revealed a significant positive association between the self-report empathy and EC; $r = .526$, $p = .014$.

Neuroimaging Data.

Whole-Brain Analysis.

First, a whole-brain analysis was carried out to examine the differences between the brain activity when viewing negative versus neutral stories (all negative > all neutral). As evident in Figure 4 and Table 3, the results revealed increased activation in the medial cingulate cortex (MCC), left inferior frontal gyrus (LIFG), left temporal pole (TP), left caudate (LC), cerebellum (CE), left temporoparietal juncture (LTPJ), and right primary somatosensory cortex (RPSA).

Figure 4. Results of whole-brain analysis. Highlighted areas surpassed $z > 2.3$ threshold on all negative > all neutral contrast. LTPJ = left temporoparietal juncture, LIFG = left inferior frontal gyrus, LTP = left temporal pole, LC = left caudate, CE = cerebellum

Table 3. Results of whole-brain analysis.

All negative > All neutral					
Area	Peak Voxel Coordinates			z-score	Number of Voxels
	X	Y	Z		
Medial Cingulate Cortex	8	-16	54	3.13	260
Left Inferior Frontal Gyrus	-50	18	24	3.32	304
Left Temporal Pole	-58	6	-12	3.18	351
Left Caudate	-12	-6	18	4.14	685
Cerebellum	-22	-52	-20	4.78	912
Cerebellum	-24	-46	-50	3.72	360
Left Temporoparietal Juncture	-56	-56	28	4.39	1577
Right Primary Somatosensory Area	38	-24	62	4.73	2065

† Peak voxel coordinates are based on Montreal Neurological Institute (MNI) standard Atlas.

Region of Interest (ROI) Analysis.

A repeated-measure analysis of variance was performed on each brain ROI to compare the brain's empathic response for the six target countries. Consistent with the self-reported data, results showed no differences between the empathic responses for target countries (all p -values > .05²; Figure 5).

LAI

RAI

LTPJ

RTPJ

MCC

MPFC

Figure 5. Results of the fMRI data ROI analysis. LAI = left anterior insula, RAI = right anterior insula, LTPJ = left temporoparietal juncture, RTPJ = right temporoparietal juncture, MCC = medial cingulate cortex, MPFC = medial prefrontal cortex. Bars represent standard error.

Finally, we examined the link between the self-reported measures (i.e., the reported empathy and IRI subscales) and the brain's empathic response. The Pearson correlation results revealed a positive association between the reported empathy and the RTPJ activity, $r = .479, p = .028$; and between the PT and LTPJ activity, $r = .442, p = .045$.

Finally, to clarify if our null finding was due to low power of our method, or due to small size of the effect in our results, we estimated the effect size (based on Cohen's d formula) of the differences between the contrasts of the countries. As is observable in Table 4, none of the effect sizes were above 0.8 (which is believed to signify a large effect size). On the contrary, majority of the estimated effect sizes were below 0.2, suggesting a low effect size. The values around 0.5 also show a moderate effect size. Based on the results provided here, it seems that there was no considerable effect in the differences between the countries, and this could explain our null findings in the fMRI data analysis.

Table 4. The effect size (based on Cohen's d formula) of the differences between the countries, in negative > neutral condition.

		Palestine	Iran	Japan	Saudi Arabia	Israel
Right Anterior Insula	Palestine	-	-	-	-	-
	Iran	0.20	-	-	-	-
	Japan	0.31	0.11	-	-	-
	Saudi Arabia	0.52	0.31	0.20	-	-
	Israel	0.25	0.03	0.08	0.30	-
	United States	0.35	0.15	0.04	0.17	0.12
Left Temporoparietal Junction	Palestine	-	-	-	-	-
	Iran	0.46	-	-	-	-
	Japan	0.31	0.08	-	-	-
	Saudi Arabia	0.53	0.14	0.18	-	-
	Israel	0.12	0.33	0.20	0.42	-
	United States	0.23	0.15	0.06	0.24	0.13
Medial Prefrontal Cortex	Palestine	-	-	-	-	-
	Iran	0.44	-	-	-	-
	Japan	0.43	0.02	-	-	-
	Saudi Arabia	0.35	0.11	0.13	-	-
	Israel	0.40	0.01	0.02	0.10	-
	United States	0.28	0.20	0.20	0.09	0.17
Right Anterior Insula	Palestine	-	-	-	-	-
	Iran	0.40	-	-	-	-
	Japan	0.03	0.47	-	-	-
	Saudi Arabia	0.19	0.19	0.19	-	-
	Israel	0.43	0.06	0.50	0.23	-
	United States	0.06	0.29	0.03	0.12	0.33
Right Temporoparietal Junction	Palestine	-	-	-	-	-
	Iran	0.05	-	-	-	-
	Japan	0.01	0.04	-	-	-
	Saudi Arabia	0.36	0.39	0.39	-	-
	Israel	0.07	0.04	0.07	0.30	-
	United States	0.07	0.11	0.08	0.37	0.13
Medial Cingulate Cortex	Palestine	-	-	-	-	-
	Iran	0.06	-	-	-	-
	Japan	0.15	0.19	-	-	-
	Saudi Arabia	0.20	0.23	0.06	-	-
	Israel	0.35	0.36	0.20	0.13	-
	United States	0.08	0.01	0.23	0.27	0.42

Discussion

Our results demonstrated that the participants perceived and rated the negative and neutral vignettes differently. While watching negative events, participants' MCC, IFG, TP, LC, CE, LTPJ, and PSA areas were activated, but not when watching neutral events. These areas have consistently been reported as empathy-related brain areas (Bernhardt and Singer, 2012).

The goal of the present study was to investigate the effect of national stereotypes on empathic response. We found that consistent with the participants' reported empathy, the brain did not respond to the six target countries differently. In other words, stereotypes of nations did not affect the empathic response of the participants. Studies on the link between stereotypes and empathy have generally shown that individuals exhibit ingroup favoritism while watching the pain and misfortunes of their ingroup versus outgroup members (Avenanti et al., 2010; Cikara and Fiske, 2012; Hatami et al., 2016; Xu et al., 2009). However, a closer look reveals that these studies typically used tasks with minimal information about the targets. This draws the participants' attention to the group membership of people (rather than their personal attributes) and thus, activates the stereotypical view of them. On the other hand, numerous studies have demonstrated that changing people's perception of other groups contributes to the reduction of prejudice. In decategorization approach, for example, individuals are encouraged to try to overlook the group membership of outgroup members and to think of them as mere individuals. In other words, this approach shifts the level of interaction from intergroup to interpersonal, and deactivates the stereotypes associated with group membership (Gaertner and Dovidio, 2005). The recategorization

approach also concerns categorization, but instead of eliminating categories, it involves some steps that alter the perception of group boundaries. In common ingroup identity model (Gaertner and Dovidio, 2000), people are recategorized into more inclusive groups while keeping their present group membership. This intervention places the former outgroups in the same category as ingroups and consequently decreases prejudice. For example, prejudice toward a Muslim woman may be reduced by recategorizing her as a coworker or a classmate. These approaches suggest that providing information about outgroup members may diminish the stereotypes associated with them. In this regard, Bruneau, Dufour, and Saxe (2012) investigated empathy in an intergroup context. They presented detailed vignettes about the victims to the participants and found no differences in their empathic response for the ingroup and competitive outgroup members. Another recent study using the minimal group paradigm demonstrated that the presentation of individuating information about the targets of empathy diminished the gap between empathy for ingroup and outgroup members (Bruneau et al., 2015). These results are consistent with the findings of Wheeler and Fiske (2005), who reported the deactivation of stereotypes when white people were asked to judge a personal trait of a black person, rather than categorizing him. Individuation (also called personalization) results in “outgroup members come to be perceived as individuals with unique personal characteristics rather than as undifferentiated and stereotyped members of a group, all of whom possess an identical set of personal characteristics” (Whitley, Schofield, and Snyder, 1984, p. 80). Studies finding a parochial empathy effect have usually used tasks with minimum information about the victims, whereas the vignettes used in the present study and Bruneau et al.

(2012) study included personal details about the targets of empathy. Consistent with the findings of Bruneau et al. (2015), using detailed scenarios may have decreased the empathy gap between target nations, and enabled the participants to empathize with all the protagonists at the same level, regardless of their nationality. Thus, one possible explanation for our null results is that providing personal information diluted the influence of stereotypes on empathy by individuating the victims. If that is the case, one may expect to observe increased parochial empathy when there is a lack of personal information about the victims and decreased parochial empathy when more personal information about the victims is presented to the participants. Future studies are needed to answer this question.

Our work contributes to the literature in several ways. First, this is the first study to examine the Iranians' stereotypes of nations. Considering the present international conflicts between Iran and several other countries, this study helps to have a better understanding of the Iranian people's point of view toward other nations. Second, this study examined the stereotypes of nations whereas the majority of research on this topic has focused on racial or gender stereotypes. In light of recent debates on the rise of nationalism worldwide, research on nations and related constructs could inform us about the underlying reasons for today's issues. In an interesting set of studies, Smeekes, Verkuyten, and Martinovic (2016) discovered that having a higher sense of national nostalgia was associated with opposition towards the Muslim immigrants' expressive rights. Lastly, our research was carried out on an underrepresented and non-WEIRD (Western, Educated, Industrialized, Rich, and Democratic; Henrich, Heine, and Norenzayan, 2010) sample. The majority of social

psychological studies have been conducted in WEIRD societies leading to the so-called replication crisis. This research, therefore, contributes to the generalization of the previous findings regarding the effectiveness of using detailed scenarios in reducing the empathy gap between ingroup and outgroup individuals.

Limitations and Suggestions

One limitation of our study was that we did not consider the political and ideological backgrounds of the participants. Since ideologies and political partisanship may alter social perception, future research examining stereotypes of nations should explore the ideologies of the participants and investigate the effect of political attitudes and ideologies on parochial empathy. In the present study, we did not ask individuals to take any specific perspective while reading the vignettes. However, the way people categorize themselves may affect their empathy experience and expression. One suggestion for future studies is to manipulate the self-categorization of the participants and examine its effect on their empathic response. We believe that one other reason for which we did not see any effect of stereotypes on empathy might be using detailed vignettes that individuated the victims and eliminated the stereotypical view of them. However, since we did not examine this hypothesis directly, more studies are needed to confirm this claim. Field experiments may also shed light on the practical usage of information-giving in real-world conflicts.

¹ Exact p -values: PT = .500, FS = .113, EC = .685, and PD = .771

² Exact p -values: LAI = .503, LTPJ = .472, RAI = .472, RTPJ = .665, MCC = .600, MPFC = .485

Ethical Compliance Section

Funding: The authors have no funding to disclose.

Compliance with Ethical Standards: All procedures performed in studies involving human participants were in accordance with the ethical standards of the Iran University of Medical Sciences and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Conflicts of Interest: The authors declare they have no conflict of interest.

Informed Consent: Informed consent was obtained from all individual adult participants included in the study

Acknowledgment

The authors would like to thank National Brain Mapping Laboratory (NBML) and the Neuroimaging and Analysis Group (NIAG) for their assistance with the fMRI data collection and analysis. We are grateful to Nafiseh Baedinejad and Abed Hadipour for helping us improve the language of this manuscript. We also thank Susan Fiske and Mina Cikara for their helpful feedback in various stages of this study. We are especially grateful to Emile Bruneau for his generous help and encouragement. He sadly passed away in September 2020 but his legacy continues to inspire intergroup relations researchers.

References

- Allport, G. W. (1954). *The nature of prejudice*. Oxford, England: Addison-Wesley.
- Avenanti, A., Sirigu, A., & Aglioti, S. M. (2010). Racial bias reduces empathic sensorimotor resonance with other-race pain. *Current Biology*, 20(11), 1018–1022.
- Beckmann, C. F., Jenkinson, M., & Smith, S. M. (2003). General multilevel linear modeling for group analysis in FMRI. *Neuroimage*, 20(2), 1052–1063.
- Bernhardt, B. C., & Singer, T. (2012). The neural basis of empathy. *Annual Review of Neuroscience*, 35, 1–23.
- Brauer, M. (2001). Intergroup perception in the social context: The effects of social status and group membership on perceived out-group homogeneity and ethnocentrism. *Journal of Experimental Social Psychology*, 37(1), 15–31.
- Bruneau, E. G., Cikara, M., & Saxe, R. (2015). Minding the gap: Narrative descriptions about mental states attenuate parochial empathy. *PloS One*, 10(10), e0140838.
- Bruneau, E. G., Dufour, N., & Saxe, R. (2012). Social cognition in members of conflict groups: behavioural and neural responses in Arabs, Israelis and South Americans to each other's misfortunes. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 367(1589), 717–730.
- Cikara, M., & Fiske, S. T. (2012). Stereotypes and schadenfreude: Affective and physiological markers of pleasure at outgroup misfortunes. *Social Psychological and Personality Science*, 3(1), 63–71.

- Cunningham, W. A., Johnson, M. K., Raye, C. L., Gatenby, J. C., Gore, J. C., & Banaji, M. R. (2004). Separable neural components in the processing of black and white faces. *Psychological Science*, 15(12), 806–813.
- Davis, M. H. (1980). Individual differences in empathy: A multidimensional approach. ProQuest Information & Learning, US.
- DeBruine, L., & Jones, B. (2017, May 30). Face Research Lab London Set. <https://doi.org/10.6084/m9.figshare.5047666.v3>
- Feizabadi, Z., Farzad, V., & Shahraray, M. (2007). Investigating the relationship between empathy, identity styles and commitment in humanities and technical-engineering students. *Psychological Studies*, 3(2), 55–90.
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*. American Psychological Association. <https://doi.org/10.1037/0022-3514.82.6.878>
- Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The common ingroup identity model*. Psychology Press.
- Gaertner, S. L., & Dovidio, J. F. (2005). Categorization, recategorization, and intergroup bias. *On the Nature of Prejudice: Fifty Years after Allport*, Blackwell Publishing, 71–88.

- Gutsell, J. N., & Inzlicht, M. (2010). Empathy constrained: Prejudice predicts reduced mental simulation of actions during observation of outgroups. *Journal of Experimental Social Psychology*, 46(5), 841–845. <https://doi.org/https://doi.org/10.1016/j.jesp.2010.03.011>
- Harris, L. T., & Fiske, S. T. (2006). Dehumanizing the Lowest of the Low: Neuroimaging Responses to Extreme Out-Groups. *Psychological Science*, 17(10), 847–853. <https://doi.org/10.1111/j.1467-9280.2006.01793.x>
- Hatami, J., Nejat, P., & Karamali, A. (2016). The Impact of Social-Cognitive Categorization of Others on Implicit and Explicit Empathy. *International Journal of Psychology*, 10(1), 34–51.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29.
- Heydari, F., Yoonessi, A. (2019, August 19). Emotional Face Database. Retrieved from <http://e-face.ir/>.
- Jenkinson, M., Bannister, P., Brady, M., & Smith, S. (2002). Improved optimization for the robust and accurate linear registration and motion correction of brain images. *Neuroimage*, 17(2), 825–841.
- Levine, M., Prosser, A., Evans, D., & Reicher, S. (2005). Identity and Emergency Intervention: How Social Group Membership and Inclusiveness of Group Boundaries Shape Helping Behavior. *Personality and Social Psychology Bulletin*, 31(4), 443–453. <https://doi.org/10.1177/0146167204271651>

- Ma, D. S., Correll, J., & Wittenbrink, B. (2015). The Chicago face database: A free stimulus set of faces and norming data. *Behavior Research Methods*, 47(4), 1122–1135.
<https://doi.org/10.3758/s13428-014-0532-5>
- Smeeke, A., Verkuyten, M., & Martinovic, B. (2014). Longing for the country's good old days: National nostalgia, autochthony beliefs, and opposition to Muslim expressive rights. *British Journal of Social Psychology*, 54, 561-580.
- Smith, S. M. (2002). Fast robust automated brain extraction. *Human Brain Mapping*, 17(3), 143–155.
- Szucs, D., & Ioannidis, J. P. A. (2020). Sample size evolution in neuroimaging research: An evaluation of highly-cited studies (1990–2012) and of latest practices (2017–2018) in high-impact journals. *NeuroImage*, 221, 117164.
<https://doi.org/https://doi.org/10.1016/j.neuroimage.2020.117164>
- Wheeler, M. E., & Fiske, S. T. (2005). Controlling racial prejudice: Social-cognitive goals affect amygdala and stereotype activation. *Psychological Science*, 16(1), 56–63.
- Whitley, B. E., Schofield, J. W., & Snyder, H. N. (1984). Peer preferences in a desegregated school: A round robin analysis. *Journal of Personality and Social Psychology*, 46(4), 799.
- Willadsen-Jensen, E. C., & Ito, T. A. (2006). Ambiguity and the timecourse of racial perception. *Social Cognition*, 24(5), 580–606.

Xu, X., Zuo, X., Wang, X., & Han, S. (2009). Do You Feel My Pain? Racial Group Membership Modulates Empathic Neural Responses. *The Journal of Neuroscience*, 29(26), 8525 LP – 8529. Retrieved from <http://www.jneurosci.org/content/29/26/8525.abstract>