Facing Europe: Visualizing Spontaneous In-Group Projection

Roland Imhoff, Ron Dotsch, Mauro Bianchi, Rainer Banse and Daniël H. J. Wigboldus

Psychological Science 2011 22: 1583 originally published online 14 November 2011
DOI: 10.1177/0956797611419675

Research Article

Psychological Science
22(12) 1583–1590

DOI: 10.1177/0956797611419675
http://pss.sagepub.com

Facing Europe: Visualizing Spontaneous In-Group Projection

Roland Imhoff[1], Ron Dotsch[2], Mauro Bianchi[3], Rainer Banse[1], and Daniël H. J. Wigboldus[2]

[1]Department of Psychology, University of Bonn; [2]Behavioural Science Institute, Radboud University Nijmegen; and [3]CIS – University Institute of Lisbon

Abstract

Individuals perceive their own group to be more typical of a shared superordinate identity than other groups are. This in-group projection process has been demonstrated with both self-report and indirect measures. The two studies reported here extend this research to the visual level, specifically, within the domain of faces. Using an innovative reverse-correlation approach, we found that German and Portuguese participants' visual representations of European faces resembled the appearance typical for their own national identity. This effect was found even among participants who explicitly denied that one nation was more typical of Europe than the other (Study 1). Moreover, Study 2 provides experimental evidence that in-group projection is restricted to inclusive superordinate groups, as the effect was not observed for visual representations of a category ("Australian") that did not include participants' in-group. Implications for the in-group projection model, as well as for the applicability of reverse-correlation paradigms, are discussed.

Keywords

in-group projection, reverse correlation, visual appearance, face categorization, social identity

Received 4/5/11; Revision accepted 7/6/11

Who looks more European, a dark-eyed Spaniard resembling Rafael Nadal or a pale, blonde, and freckled person resembling Boris Becker? Opinions may differ because people may have different mental representations of what typical Europeans look like. Building on the in-group projection model (Mummendey & Wenzel, 1999), we argue that the answer to this kind of question depends on the respondent's subgroup identity within the larger superordinate category. For example, White Americans might hold an internal representation of typical Americans that looks more like Bill Clinton than like Barack Obama, but the opposite may be true for African Americans. In the two studies reported in this article, we tested this idea in a cross-cultural setting (German vs. Portuguese) by employing a novel method that allowed us to create visualizations of individual participants' mental templates (reverse correlation; Mangini & Biederman, 2004).

According to the in-group projection model, individuals are motivated to judge members typical of their own subcategory as the most typical exemplars of the superordinate category. Previous research has found that individuals report greater similarity between the in-group and a superordinate category than between the out-group and the same superordinate category on a set of (self-generated) attributes (e.g., Waldzus, Mummendey, Wenzel, & Boettcher, 2004; Wenzel, Mummendey, Weber, & Waldzus, 2003), on Likert scales directly assessing typicality (Waldzus, Mummendey, Wenzel, & Weber, 2003), and on a scale representing subordinate and superordinate groups using overlapping circles (Waldzus & Mummendey, 2004). Recent research suggests that in-group projection can be detected not only at the level of declarative reasoning, using direct and explicit measures, but also on an automatic level, using indirect measures. For instance, in a lexical decision task, German and Italian participants who were primed with the concept "European" were faster to correctly identify trait words typical for their nationality than to identify trait words typical for the other nationality (Bianchi, Mummendey, Steffens, & Yzerbyt, 2010).

However, outside the laboratory, when people encounter one another, they see faces instead of group labels or trait words (a point argued more generally by Brewer, 1988; Macrae & Quadflieg, 2010; and McArthur & Baron, 1983). Humans infer social categories (e.g., sex or race) from visual appearance and are likely to have some sort of mental representations of typical members of those social categories. We

Corresponding Author:
Roland Imhoff, Department of Psychology, Kaiser-Karl-Ring 9, 5311 Bonn, Germany
E-mail: rimhoff@uni-bonn.de

propose that if in-group projection indeed takes place in ecologically valid domains, the subjective visual appearance of typical superordinate-group members is also likely biased by the observer's subgroup identity. For instance, Germans should hold a visual representation of Europeans that looks more German than Portuguese, and Portuguese should hold a visual representation of Europeans that looks more Portuguese than German.

To test this hypothesis, we used a reverse-correlation image classification task (Dotsch, Wigboldus, Langner, & van Knippenberg, 2008; Mangini & Biederman, 2004), which enabled us to estimate individuals' visual representations of specific categories. On each trial, participants indicated which of two faces was more typical for a category. Each face consisted of the same base face distorted with random noise (with different noise applied in each trial). Averaging all selected noisy stimuli across a large number of trials yielded a classification image, a visual approximation of the participant's mental representation for the target category (for technical details, see Mangini & Biederman, 2004). With this technique, it is possible to uncover biases in the visual representation of typical faces for social categories. For instance, Dotsch et al. (2008) found that Dutch participants' visual representation of typical Moroccan faces looked more criminal and less trustworthy the higher participants' level of implicit prejudice toward Moroccans.

Taking a parallel approach, we asked German and Portuguese participants to perform a reverse-correlation image classification task in which they chose the more European-looking image from two alternatives in each trial. We then calculated European classification images for the German and Portuguese participants separately, by averaging the noisy images each group selected as more European looking. On the basis of our in-group projection hypothesis, we expected the European image to look more German for the German sample than for the Portuguese sample, and to look more Portuguese for the Portuguese sample than for the German sample. Study 2 tested whether such projection is restricted to inclusive superordinate categories, a necessary condition derived from the in-group projection model.

Study 1

Method

Study 1 consisted of two parts: image construction and image rating. In the image-construction phase, German and Portuguese students performed a forced-choice reverse-correlation image classification task that allowed us to create visualizations of their mental representation of typical European faces. In the image-rating phase, independent participants rated the resulting faces on German and Portuguese typicality.

Image construction. Students from the University of Bonn (27 women, 26 men) and Lisbon University Institute (23 women, 27 men) were recruited on campus for a study on face perception. Participants ranged in age from 18 to 56 years (M = 24.03, SD = 6.38), and mean age did not differ between the two samples ($F < 1$).

Participants were asked to complete a forced-choice reverse-correlation image classification task. In each of 770 trials, they chose the more European-looking face from two stimulus faces presented side by side. All stimuli consisted of the same base face with random noise superimposed (Figs. 1a and 1b; see Dotsch et al., 2008, for details). Within a single trial, one stimulus consisted of the base face with a random-noise pattern added, and the other consisted of the base face with the same pattern subtracted. The base face was a 50% morph of two aggregated faces of male individuals, one created from photographs taken in Cologne and the other created from photographs taken in Lisbon (Mike, 2003). By averaging all stimulus faces participants from each sample had chosen as more European, we obtained a group-wise classification image for that sample's nation.

Subsequently, participants completed a measure of explicit in-group projection, rating each nation separately for its typicality of the superordinate category "European." Ratings were made on a visual analogue scale in which the nation in question was represented by a circle containing that nation's flag and Europe was represented by a circle containing the European Union flag. The scale ranged from 1 (both circles at opposite ends of a line) to 7 (the nation circle fully included in the European circle; Schubert & Otten, 2002). This measure of explicit in-group projection was included so that we could explore whether the hypothesized visual in-group projection would be moderated by explicit in-group projection.

Image rating. To quantify the typicality of the resulting averaged nation-based classification images, we asked independent raters from Germany (n = 174; 109 women, 65 men) and Portugal (n = 63; 40 women, 23 men) to rate these images on a scale from 1 (*typically Portuguese*) to 9 (*typically German*). The intraclass correlation coefficients (ICCs) were .99 for the German raters and .94 for the Portuguese raters.

Results

Explicit in-group projection. To test whether there was any in-group projection on the explicit level, we subjected the average scores on the visual analogue scale to a 2 (target nation: Germany vs. Portugal) × 2 (sample nation: Germany vs. Portugal) mixed-model analysis of variance (ANOVA). On average, Germany was rated as more typical of Europe than Portugal was, $F(1, 101) = 15.43$, $p < .001$, $\eta^2 = .13$. However this main effect was qualified by an interaction, $F(1, 101) = 7.76$, $p < .03$, $\eta^2 = .05$, indicative of in-group projection. Whereas German participants rated Germany as more typical of Europe than Portugal is, $t(52) = 5.18$, $p < .001$, Cohen's $d = 0.71$, Portuguese participants' ratings of the two nations did not differ, $t(49) = 1.02$, $p = .32$, Cohen's $d = 0.14$. Thus, on an explicit level, we found support for *relative* in-group

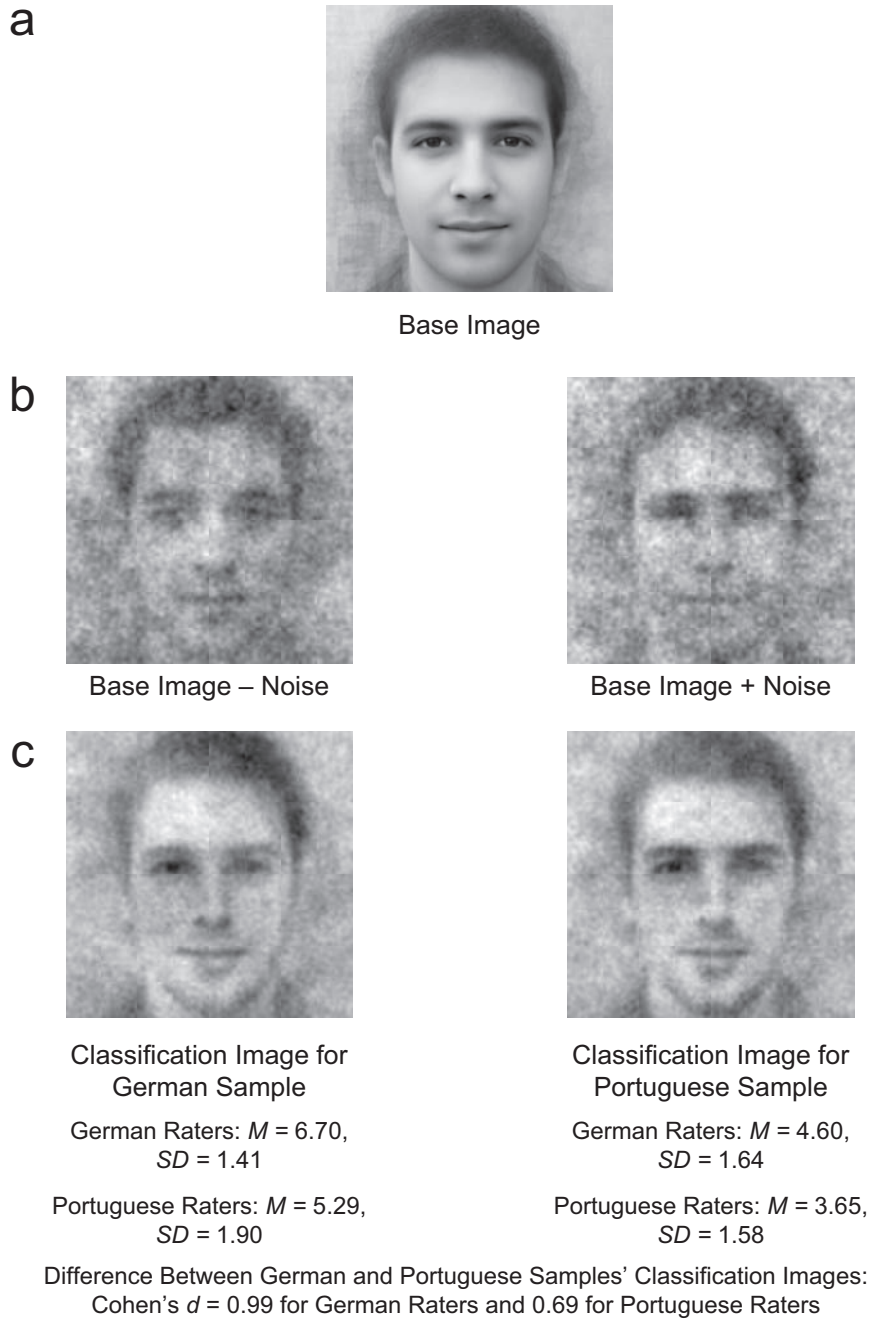

Fig. 1. Illustration of the stimuli used in the image classification task and results from Study 1. In both Study 1 and Study 2, the same base image (a) was used to create all stimuli for the image classification task; on a given trial, one stimulus consisted of the base face with a random-noise pattern added, and the other consisted of the base face with the same pattern subtracted (b). The images in (c) are the averaged European classification images for German and Portuguese participants in the image-construction phase of Study 1. The statistics indicate German and Portuguese raters' mean typicality ratings of these images, on a scale from 1 (*typically Portuguese*) to 9 (*typically German*), and the effect sizes of the difference between the German and Portuguese classification images.

projection, which is a common result for groups of differing status (for a discussion, see Wenzel, Mummendey, & Waldzus, 2007).

Visual in-group projection. Participants' responses in the reverse-correlation task were used to create classification images for the two samples after we discarded trials in which

participants responded in less than 300 ms (6.2% of the trials). By averaging all stimulus faces participants from each sample had chosen as more European, we obtained a group-wise classification image for that sample nation (see Fig. 1c; for the details of the procedure, see Dotsch et al., 2008). As described earlier, independent raters judged these images on their typicality. The classification image resulting from the German sample's choices was judged as more typically German than the classification image resulting from the Portuguese sample's choices, both by German raters, $t(173) = 13.03$, $p < .001$, Cohen's $d = 0.99$, and by Portuguese raters, $t(62) = 5.43$, $p < .001$, Cohen's $d = 0.69$ (Fig. 1c). The averaged typicality scores were significantly different from the midpoint of the scale; the European image derived from the German sample was judged German, $t(236) = 12.20$, $p < .001$, and the European image derived from the Portuguese sample was judged Portuguese, $t(236) = 6.01$, $p < .001$.

Next, we looked at the relation between the reverse-correlation task and explicit in-group projection. Because of error variance, classification images of individual participants are commonly noisier than classification images averaged over larger groups of participants; therefore, we aggregated results from the image classification task across groups created on the basis of the explicit in-group projection measure. Specifically, we split each national sample into three groups: participants who judged the in-group as the group more typical of Europe ($n_{\text{German sample}} = 30$, $n_{\text{Portuguese sample}} = 11$), those who judged the two nations to be equally typical of Europe ($n_{\text{German sample}} = 20$, $n_{\text{Portuguese sample}} = 24$), and those who judged the out-group as the group more typical of Europe ($n_{\text{German sample}} = 3$, $n_{\text{Portuguese sample}} = 15$). For each of these six groups, we generated a classification image, a visualization of what, on average, that group believed typical European faces look like. The same independent raters who judged the two classification images in our first analysis rated the prototypicality of these six images as well.

For reasons of parsimony, the ratings of the German and Portuguese raters were collapsed and then subjected to a 2 (sample nation: Germany vs. Portugal) × 3 (explicit in-group projection: out-group more typical vs. groups equally typical vs. in-group more typical) mixed-model ANOVA. (Separate analyses for German and Portuguese raters revealed significant effects in the same direction as reported here in both samples. Complete analyses are available on request.) This ANOVA yielded a main effect of sample nation, $F(1, 236) = 376.62$, $p < .001$, $\eta^2 = .62$, as well as a significant interaction, indicating that the effect of sample nation was contingent on explicit in-group projection, $F(2, 235) = 106.27$, $p < .001$, $\eta^2 = .48$. The means (Fig. 2) showed a visual in-group projection effect for those participants who explicitly judged their own nation to be more typical or the two nations to be equally typical of Europe. For those who judged the out-group to be more typical, sample nation had no effect on typicality ratings, $t(236) = 1.76$, $p > .05$.

Intriguingly, an inspection of the means suggested that the visual in-group projection effect was strongest among those participants who explicitly denied seeing either of the two

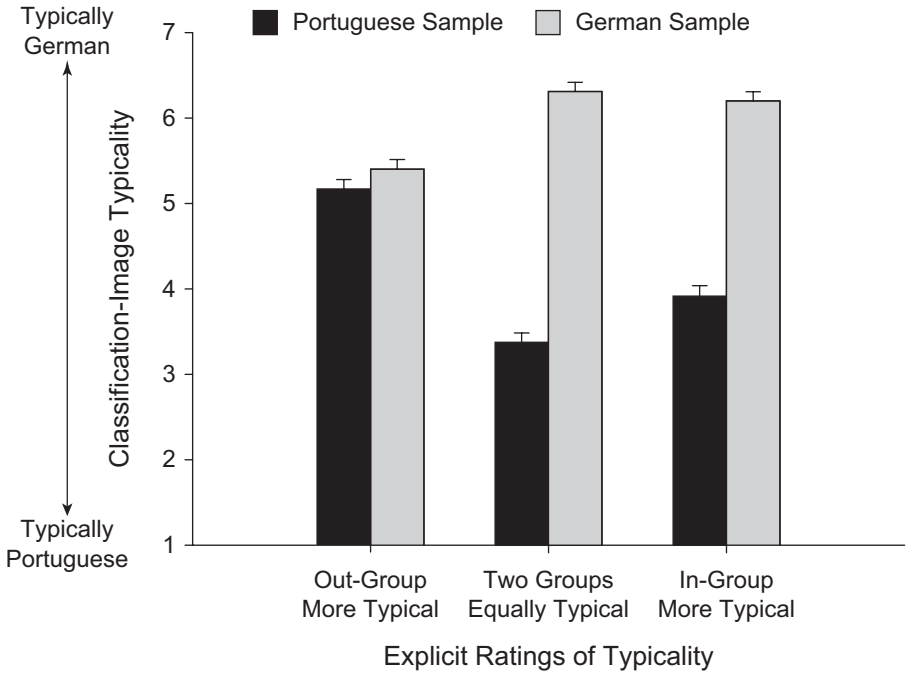

Fig. 2. Results from Study 1: mean typicality ratings (scale from 1, *typically Portuguese*, to 9, *typically German*) of European classification images generated for German and Portuguese participants as a function of their explicit ratings of the two nations' typicality (in-group more typical of Europe vs. two groups equally typical vs. out-group more typical). Error bars represent standard errors of the mean.

nations as more typical of Europe. An additional 2 (sample nation: Germany vs. Portugal) × 2 (explicit in-group projection: groups equally typical vs. in-group more typical) ANOVA supported this impression, revealing a significant interaction of sample nation and explicit in-group projection, $F(1, 236) = 14.85$, $p < .001$, $\eta^2 = .06$. Thus, the reverse-correlation image classification task revealed in-group projection even when participants' self-report did not.

As the base image was always male, we wondered whether participants' gender moderated the effect. The logic of the in-group projection model suggests that for both male and female participants, the mental representation of the typical male European should be biased in the direction of the in-group's national male prototype. We tested this prediction by generating separate classification images for German and Portuguese male and female participants. Forty-eight raters (25 German, 23 Portuguese; 37 women, 11 men; mean age = 25.49 years, $SD = 7.40$) judged the typicality of these four images on the same scale used previously (i.e., scale from 1, *typically Portuguese*, to 9, *typically German*). The ICC across all raters was .98, and ratings of the two groups were combined (separate analyses for German and Portuguese raters revealed significant effects in the same direction as reported here; complete analyses are available on request). The German women's classification image ($M = 6.21$, $SD = 1.74$) looked more German than the Portuguese women's classification image did ($M = 3.08$, $SD = 1.54$), $t(47) = 8.37$, $p < .001$, Cohen's $d = 1.90$. Likewise, the German men's classification image looked more German ($M = 5.96$, $SD = 1.85$) than the Portuguese men's classification image did ($M = 4.33$, $SD = 1.83$), $t(47) = 4.79$, $p < .001$, Cohen's $d = 0.88$. Somewhat surprisingly, women showed more projection than men, as indicated by a significant interaction term in a 2 (sample nation) × 2 (participant's gender) ANOVA, $F(1, 47) = 12.03$, $p < .005$, $\eta^2 = .20$.

Discussion

German and Portuguese participants' ratings of which faces were more typical of a shared superordinate category ("European") generated classification images that were judged as more typical of participants' respective subgroup's identity than of the other group's subordinate identity (e.g., the German participants' classification image was judged as more German than Portuguese). Thus, the process of in-group projection is not restricted to explicit ratings of typicality, but extends to representations of what typical superordinate-group members look like. Germans' mental template of the typical European looks more German than the mental templates of other Europeans (e.g., Portuguese) do. We observed this effect in women despite the fact that the faces presented in the classification task were always male.

However, Study 1 does not provide any evidence that the projection process is specific to a subordinate category and an inclusive superordinate category. It is conceivable that when confronted with a highly ambiguous task (the classification of noisy images), participants simply chose the exemplar that seemed more familiar to them on each trial, irrespective of the superordinate category they were asked about. We therefore conducted a second study to test whether visual projection is restricted to an inclusive superordinate category. Moreover, it may be argued that our rating scale in Study 1 was problematic because it treated German and Portuguese typicality as opposite ends of a continuum. The fact that typicality for the nations was inherently negatively correlated might have led raters to adopt a corresponding mind-set in which low typicality for Germans was necessarily confounded with high typicality for Portuguese. Therefore, we had raters in Study 2 judge typicality of the classification images for Germans and for Portuguese separately.

Study 2

To test whether the visual projection observed in Study 1 is restricted to superordinate in-groups, we asked a new sample of German and Portuguese participants to perform the same reverse-correlation image classification task as in Study 1 except that the instructions were varied. Whereas half of the participants in each country were instructed to choose the more European-looking face in each trial (European condition), as in Study 1, the other half chose the more Australian-looking face (Australian condition). Australian was chosen as the second category because it is on the same level as European (i.e., it refers to a continent) but is not inclusive of the participants' subordinate categories (i.e., German and Portuguese). On the basis of the in-group projection account, we expected that the classification images would reflect participants' nationality in the European condition but not in the Australian condition.

Method

Image construction. A sample of 23 native German students (22 women, 1 man; mean age = 25.57 years, $SD = 9.68$) and 30 native Portuguese students (23 women, 7 men; mean age = 19.93 years, $SD = 1.61$) participated in this phase of the study. Participants completed the same reverse-correlation image classification task as in Study 1, but were randomly assigned to one of two experimental conditions that differed only with regard to the classification instruction. In the European condition, participants were instructed to choose the more European-looking face, whereas in the Australian condition, they were instructed to choose the more Australian-looking face.

Image rating. Using the same procedure as in Study 1, we created four aggregated classification images, one for each of the cells in the 2 (classification instruction: European vs. Australian) × 2 (sample nation: Germany vs. Portugal) design. German ($n = 70$; 49 women, 21 men) and Portuguese ($n = 67$; 45 women, 22 men) rated these images regarding their typicality for Germans and their typicality for Portuguese, on scales

from 1 (*not typical at all*) to 7 (*very typical*). The ICCs were .95 for the German raters and .89 for the Portuguese raters. The ratings of the two samples were collapsed (separate analyses for German and Portuguese raters revealed significant effects in the same direction as reported here; complete analyses are available on request).

Results

We calculated each classification image's relative typicality by subtracting the Portuguese-typicality score from the German-typicality score. Thus, positive scores indicated that the image was rated as more typical for Germans than for Portuguese, whereas negative scores indicated greater typicality for Portuguese than for Germans. These relative typicality scores were subjected to a 2 (classification instruction: European vs. Australian) × 2 (sample nation: Germany vs. Portugal) mixed-model ANOVA.

The results revealed a main effect of sample nation, $F(1, 136) = 39.16$, $p < .001$, $\eta^2 = 22$; the images generated by the German sample were rated as more German ($M = 1.36$, $SD = 1.79$) than the images generated by the Portuguese sample ($M = –0.12$, $SD = 1.97$). This main effect was qualified by an interaction with classification instruction, $F(1, 136) = 78.58$, $p < .001$, $\eta^2 = 37$. An inspection of the means (Fig. 3) and Bonferroni-adjusted simple tests ($\alpha = .008$) revealed that the European classification image generated by the German sample was judged as more typical for Germans than any other classification image was, ps $< .001$. Similarly, the European classification image generated by the Portuguese sample was judged as more typical for Portuguese than any other image was, ps $< .001$. Both difference scores were significantly different from zero, which corroborated that the German European classification image looked more German than Portuguese, $t(136) = 10.00$, $p < .001$, and the Portuguese European classification image looked more Portuguese than German, $t(136) = 6.55$, $p < .001$.

The Australian classification images did not reflect any ingroup projection. The classification images generated by the German sample and those generated by the Portuguese sample did not differ significantly in their relative typicality scores, $t(136) = 2.24$, $p = .02$, and in fact showed a trend opposite the direction of the pattern for the European classification images: The Australian classification image generated by Germans did not look more typical for one nation than for the other, as the difference score was exactly zero. The Australian classification

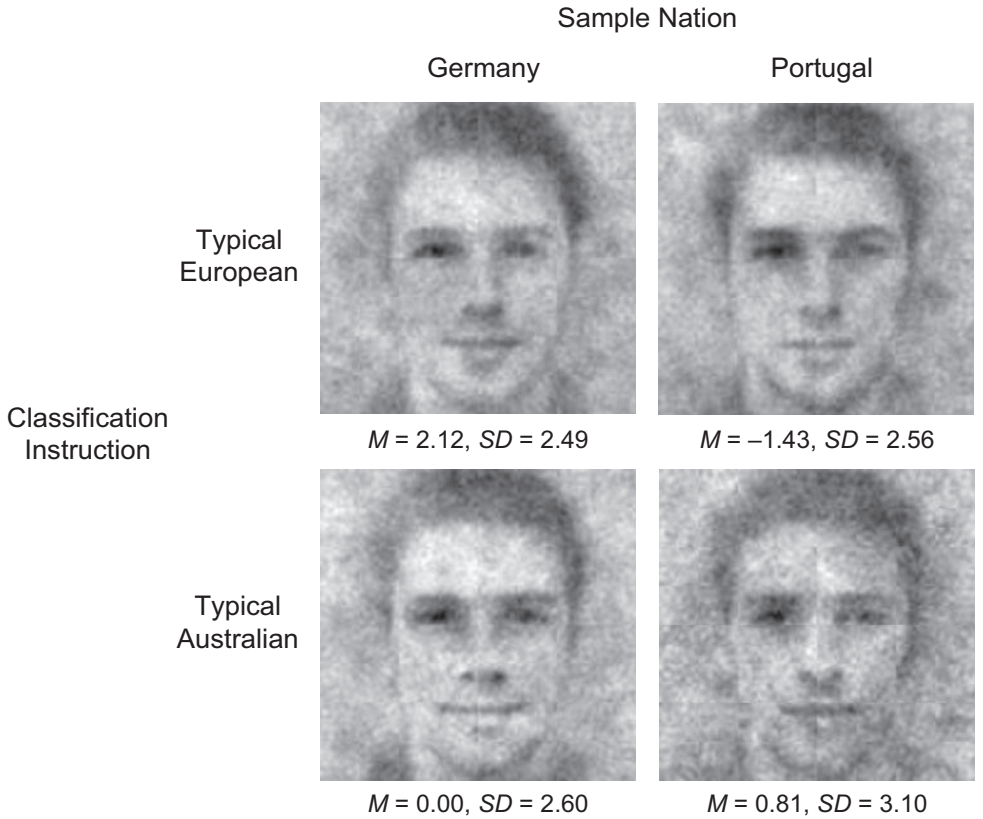

Fig. 3. Results from Study 2. The images are the classification images for German and Portuguese participants who were instructed to select the more European-looking face in each trial (top row) and who were instructed to select the more Australian-looking face in each trial (bottom row). For each image, the mean difference between its rated typicality for Germans and its rated typicality for Portuguese ($N = 137$ raters) is shown. Positive numbers indicate greater typicality for Germans, and negative numbers indicate greater typicality for Portuguese.

image generated by the Portuguese sample looked more German than Portuguese, as the difference score was significantly greater than zero, $t(136) = 3.06$, $p < .005$.

Discussion

The results from Study 2 replicated the findings of Study 1. The mental template of typical European faces was contingent on subgroup identity. Whereas German participants' European classification image appeared more German than Portuguese, the opposite was found for Portuguese participants' European classification image. This effect was obtained only for the visual template of the superordinate category "European." The classification images for the noninclusive category "Australian" showed no projection effect. Any difference between German and Portuguese participants' Australian classification images was in the reverse direction. These results support our interpretation that our studies specifically tapped into in-group projection, and that participants did not simply pick the more familiar images in the classification task. The fact that the projection effect for a male face was replicated in a convenience sample with virtually no male participants corroborates our finding from Study 1 that female participants, and not only male participants, showed projection to a male face.

General Discussion

Across two studies, our data support the idea that individuals' construal of the typical face of the inclusive superordinate category "European" is biased toward their own subgroup's typical appearance (German vs. Portuguese). Note that in the reverse-correlation image classification task, a participant's nationality was never mentioned. Participants could have used any facial cues for the European classification. However, participants spontaneously used facial cues associated with their in-group. The fact that participants did not use these facial cues when they were instructed to perform the same task for a noninclusive category ("Australian") implies that the effect is restricted to representations of the individual's inclusive superordinate category.

The visual projection effects consistently observed in these two studies indicate that spontaneous in-group projection occurs at the visual level. Previous research convincingly showed in-group projection in contexts in which comparative mind-sets were triggered by explicit ratings of typicality or a categorization task, such as an Implicit Association Test (IAT). In the present study, participants were merely instructed to choose the exemplars that were more representative of the superordinate category, without any comparison being implied.

We found a conditional relation between visual in-group projection and explicit in-group projection. The subgroups that claimed greater typicality of their own nation than of the other nation produced classification images that were rated as resembling their own nation more than the other nation, whereas the subgroups that rated the other nation as more typical than their own did not differ in their visual templates of Europeans. However, our results go beyond the explicit level: Not only was the cross-cultural projection effect observable among participants who explicitly judged neither of the two nations as more typical than the other, but this effect was actually largest among this explicitly neutral group. Although we cannot rule out entirely the possibility that this discrepancy between explicit claim and spontaneous visual categorization was due to low sensitivity of the explicit scale, another explanation may be the contamination of explicit measures with strategic self-representation strategies. Participants may have been motivated to deny differential typicality of the two nations in order to appear unbiased. The strong effects found in the reverse-correlation task may thus indicate that previous research has underestimated the pervasiveness of projection processes.

However, the finding that individuals who were explicitly neutral had a visual template of the superordinate category that was biased toward their own nationality may also indicate that there are distinct processes for visual and explicit in-group projection. Whereas explicit in-group projection may be motivated by self- and group enhancement, visual projection may derive from even more basic processes. As superordinate categories are commonly highly abstract, reliance on the visual template of one's own subgroup may be an efficient way of construing the superordinate category, serving as a heuristic to make sense of that category (Machunsky & Meiser, 2009). Future research combining visual in-group projection and more indirect measures of in-group projection such as an IAT (e.g., Devos & Banaji, 2005) could be useful for exploring whether visual in-group projection is based on motivated, albeit implicit, processes (and thus relatively immune to self-representation concerns) or on basic heuristic processes for construing abstract categories efficiently.

We reasoned that participants projected a visual appearance prototypical of their in-group onto the superordinate category. However, our findings may also be consistent with the idea that participants simply projected their own visual appearance onto the larger group, thus engaging in a process of social projection (Mullen et al., 1985; Robbins & Krueger, 2005). Our data do not rule out this alternative explanation. It could be that the reference point for participants' judgments was the self and not the in-group. However, one experimental detail may be slightly more compatible with in-group than with social projection. We always used a male base image, which made it easier for men than for women to project their own personal appearance onto the face, but we observed large projection effects among female participants as well.

The fact that the projection effect was observed only for the inclusive superordinate category of Europeans in Study 2 is compatible with both accounts, as social projection is also commonly larger for in-groups than for out-groups. However, in contrast to what has been found for social projection, (Robbins & Krueger, 2005), we found no traces of any projection to the

out-group. Future research will have to test specifically whether visual in-group projection goes beyond social projection, as has recently been shown for explicit in-group projection (Bianchi, Machunsky, Steffens, & Mummendey, 2009).

In addition to demonstrating visual in-group projection in faces, our studies speak to the potential of the increasingly popular reverse-correlation method. Although, in principle, it has been shown that reverse-correlation paradigms can capture dimensions beyond valence (e.g., Mangini & Biederman, 2004; Oosterhof & Todorov, 2008), previous reverse-correlation research on intergroup biases (e.g., Dotsch et al., 2008) has capitalized on facial features that were highly correlated with valence (criminality, trustworthiness). In contrast, we used a category that was equally positively valued by the two national samples, so that any valence-driven differences between the samples were unlikely. Thus, reverse-correlation image classification paradigms seem to be able to tap into rather subtle nonevaluative differences in individuals' category templates.

What kind of image comes to mind when one thinks of the typical representative of a nonhomogeneous category, such as the multinational European community? Our research suggests that whether this mental image resembles Rafael Nadal or Boris Becker may depend strongly on one's own subgroup identity.

Acknowledgments

The first two authors contributed equally to the research reported in this article. The authors would like to thank Mike Mike for generously permitting his images (http://www.faceoftomorrow.com) to be used to create experimental material, and Olivier Corneille and the Social Psychology group at ISCTE Lisbon for commenting on previous versions of this manuscript.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

References

Bianchi, M., Machunsky, M., Steffens, M. C., & Mummendey, A. (2009). Like me or like us: Is ingroup projection just social projection? *Experimental Psychology*, *56*, 198–205.

Bianchi, M., Mummendey, A., Steffens, M. C., & Yzerbyt, V. Y. (2010). What do you mean by "European"? Evidence of spontaneous ingroup projection. *Personality and Social Psychology Bulletin*, *36*, 960–974.

Brewer, M. B. (1988). A dual-process model of impression formation. In T. K. Srull & R. S. Wyer (Eds.), *Advances in social cognition: A dual process model of impression formation* (pp. 1–36). Hillsdale, NJ: Erlbaum.

Devos, T., & Banaji, M. R. (2005). American = White? *Journal of Personality and Social Psychology*, *88*, 447–466.

Dotsch, R., Wigboldus, D. H. J., Langner, O., & van Knippenberg, A. (2008). Ethnic out-group faces are biased in the prejudiced mind. *Psychological Science*, *19*, 978–980.

Machunsky, M., & Meiser, T. (2009). Ingroup projection as a means to define the superordinate category efficiently: Response time evidence. *Social Cognition*, *27*, 57–75.

Macrae, C. N., & Quadflieg, S. (2010). Perceiving people. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., Vol. 1, pp. 428–463). Hoboken, NJ: John Wiley & Sons.

Mangini, M. C., & Biederman, I. (2004). Making the ineffable explicit: Estimating the information employed for face classifications. *Cognitive Science*, *28*, 209–226.

McArthur, L. Z., & Baron, R. M. (1983). Toward an ecological theory of social perception. *Psychological Review*, *90*, 215–238.

Mike, M. (2003). *The face of tomorrow*. Retrieved from http://www.faceoftomorrow.com

Mullen, B., Atkins, J. L., Champion, D. S., Edwards, C., Hardy, D., Story, J. E., & Vanderklok, M. (1985). The false consensus effect: A meta-analysis of 115 hypothesis tests. *Journal of Experimental Social Psychology*, *21*, 262–283.

Mummendey, A., & Wenzel, M. (1999). Social discrimination and tolerance in intergroup relations: Reactions to intergroup difference. *Personality and Social Psychology Review*, *3*, 158–174.

Oosterhof, N. N., & Todorov, A. (2008). The functional basis of face evaluation. *Proceedings of the National Academy of Sciences, USA*, *105*, 11087–11092.

Robbins, J. M., & Krueger, J. (2005). Social projection to ingroups and outgroups: A review and meta-analysis. *Personality and Social Psychology Review*, *9*, 32–47.

Schubert, T., & Otten, S. (2002). Overlap of self, ingroup, and outgroup: Pictorial measures of self-categorization. *Self and Identity*, *1*, 535–576.

Waldzus, S., & Mummendey, A. (2004). Inclusion in a superordinate category, in-group prototypicality, and attitudes towards outgroups. *Journal of Experimental Social Psychology*, *40*, 466–477.

Waldzus, S., Mummendey, A., Wenzel, M., & Boettcher, F. (2004). Of bikers, teachers and Germans: Groups' diverging views about their prototypicality. *British Journal of Social Psychology*, *43*, 385–400.

Waldzus, S., Mummendey, A., Wenzel, M., & Weber, U. (2003). Towards tolerance: Representations of superordinate categories and perceived in-group prototypicality. *Journal of Experimental Social Psychology*, *39*, 31–47.

Wenzel, M., Mummendey, A., & Waldzus, S. (2007). Superordinate identities and intergroup conflict: The ingroup projection model. *European Review of Social Psychology*, *18*, 331–372.

Wenzel, M., Mummendey, A., Weber, U., & Waldzus, S. (2003).The ingroup as pars pro toto: Projection from the ingroup onto the inclusive category as a precursor to social discrimination. *Personality and Social Psychology Bulletin*, *29*, 461–473.