

From interpersonal to inter-ethnic differentiation: The role of psychological essentialism

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個人差から集団差への一般化における心理的本質主義の役割

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要約

自分とは反対の性格特性を持つ他者が、異なる民族の一員であった場合、人はその性格の違いを民族性が原因であるかのように解釈する場合がある。日常生活においてみられるこのような過度な一般化は、民族に関する偏ったステレオタイプを形成する一因となる。本研究は、個人の特徴に関する知識が、カテゴリーに関する知識へと一般化される状況と、それに影響を与える個人差要因に着目した実証的研究を行った。個人差要因として、心理的本質主義信念を測定し、民族カテゴリーに行動や認知の原因となる本質的因子の存在を錯覚しやすい人ほど、他民族他者と自身の違いを民族性の違いとして一般化する傾向が強いと予測した。実験参加者は全て日本人学生であったが、実験参加のパートナーという名目で「留学生」（実験1ではインドネシア国籍、実験2では中国国籍）あるいは「日本人」の実験協力者と同時に実験に参加した。実験では、参加者および実験協力者に対して認知傾向を調べるテストを行い、テスト後に偽のフィードバックを与えた。フィードバックとして、パートナー間にみられる認知傾向の類似性（同じ・異なる）を操作した。その結果、パートナー間の類似性に関する情報を日本人および留学生全般に一般化する程度は、パートナーの国籍とフィードバックの類似性の組み合わせによって異なることが明らかとなった。具体的には、留学生パートナーとの間に認知傾向の違いが告げられた参加者において、その違いを日本人および留学生カテゴリーに一般化し、民族間の差異を過度に推測する傾向がみられた。同様の一般化傾向は、日本人パートナーと同じ認知傾向があると告げられた参加者にもみられた。しかし、留学生との違いを民族間の差異に一般化した前者の場合のみ、その程度が心理的本質主義信念の強さと関連していることが明らかになった。本研究により、異なる民族他者との交流で得られる些細な情報からも、民族に関するステレオタイプが形成される可能性が示唆され、それには民族カテゴリーに関する信念の個人差が影響を与えることが明らかとなった。

Key words

psychological essentialism, ethnic category, categorization, intergroup perception, stereotyping

1. Introduction

“Japanese are cautious whereas Australians are happy-go-lucky.” We often find ourselves to share such an overly generalized view about differences in social categories. One way to acquire knowledge about group differences is through experiences of interpersonal comparisons. For instance, a cautious Japanese student may overestimate the prevalence of his or her own characteristic among “Japanese in general” by learning that another Japanese person is also cautious, while underestimating the prevalence of the same trait among Australian. In a different situation, the Japanese student may find that an Australian next to him/her has a happy-go-lucky personality unlike him/herself, and expect to observe a difference in the distribution of happy-go-lucky versus cautious personalities in each group. Such over-generalization about categorical characteristics may shape

biased perception of intergroup differences.

The fundamental question posed by such inference is when and how people choose a certain social category as the basis for a particular inference. In other words, there may be a rationale for people to choose “Japanese” over “students” as a target category to attribute their own characteristics to and thereby infer categorical differences under a given circumstance. In the present study, we emphasize that people are thought to have an intuitive expectation that certain social categories are fundamentally different from others. As we will discuss in a greater detail below, this view is in line with contentions made by previous researchers concerning the role of naïve “theory” in categorization processes (e.g., Medin & Ortony, 1989). We attempt to reveal the interplay between such an intuitive belief and situational cues that instigate the theory on intergroup differentiation.

1.1 Situational cues

There can be at least two different kinds of contexts in which people may draw inferences about categories and thus expect

intergroup differences. The first type of inference may be elicited by interpersonal similarity between individual members from the same group. That is, when discovering that you and a member of your in-group have the same personality characteristic, you may generalize this information to infer a commonality among in-group members as a whole. This assimilation within the group based on self-anchoring may further accompany intergroup contrast, as the other side of the coin (Cadinu & Rothbart, 1996). In other words, an underestimation of the prevalence of the perceiver's own attributes among out-group members may be observed, resulting in accentuation of intergroup differences (Clement & Krueger, 2002; Keysar, Barr, & Balin, 1998; Mullen, Dovidio, Johnson, & Copper, 1992; Mussweiler & Neumann, 1999; Mussweiler & Strack, 2000).

A second type of intergroup accentuation may take place when a *difference from an out-group member* is observed. For example, when finding out that you are an optimist and the other person from an out-group is a pessimist, you may infer that the difference comes from the difference in social categories. Past studies have indeed evidenced such expectation of intergroup difference can take place even on the basis of a fictitious, experimentally manufactured trait (Miller & Prentice, 1999). This co-variation between a novel trait and membership of social category is called category co-variation based on the "*category divide hypothesis*" (Miller & Prentice, 1999). An illusory association between novel traits and social categories are inferred, and thus the underlying cause of the interpersonal difference is attributed to intergroup difference. As a consequence, assimilation within groups and differentiation between groups are accentuated under the category co-variation situation.

1.2 Intuitive beliefs about social categories

A question still remains concerning the underlying mechanism of this second type of inference. Why can an inference concerning group attributes (i.e., the distribution of experimentally manufactured traits within each category) be drawn even though only one member from each category is at present? One possibility is that people may have intuitive explanations concerning why certain groups should be different from each other and why the members of the same category should look similar (Gil-White, 2001). A well-known example of such lay "theory" is "psychological essentialism," namely, a naïve understanding that certain social categories have a core element (or elements) that determines physical and behavioral features of all category members (e.g., Medin & Ortony, 1989). Essentialist beliefs are characterized to have inductive potential, in that they lead perceivers to inferences about attributes of members on the basis of categorical information (Rothbart & Taylor, 1992). Hence, a mere difference between single members of different categories may be used as a sample to confirm their theory, reflected in an inference of the difference between the entire group populations. This inclination should depend on the powerfulness of the theory, that is, the

extent that they view the groups in an essentialist manner. The concept of psychological essentialism thus provides an intriguing explanation for the intra-group assimilation and inter-group accentuation, particularly in the category co-variation situation.

A study conducted by Prentice and Miller (2006; see also Miller & Prentice, 1999) was among the first that approached the category co-variation situation in an experimental setting from the essentialism perspective. They introduced to participants in mixed-gender pairs a novel test of "perceptual styles" thereby dividing them into "over-" and "under-estimators" of dots presented on a computer display. Although perceptual styles were not supposed to imply any gender-related information, participants inferred the perceptual difference between the individuals to be something caused by a fundamental gender difference. Prentice and Miller (2006) interpreted their data that the belief about the inherent essence of social categories led the participants to exaggerate the generalization of self-relevant novel attributes to the in-group when observing the co-variance of interpersonal and intergroup differences. However, to the best of our knowledge, no previous studies to date, including Prentice and Miller (2006), have provided direct evidence that essentialist beliefs underlie the inductive inference under the category co-variation situation. The first purpose of the present study was to achieve this goal.

Another limitation of Prentice and Miller (2006) is that the study does not tell us how much the finding of intergroup differentiation in prevalence estimates was unique to the category co-variation situation. As we have stated earlier, the differentiation can result from learning interpersonal similarity within a group (i.e., self-anchoring: see Mullen et al., 1992), in addition to the difference across groups (i.e., category co-variation). Essentialist beliefs may play a critical role in the latter type, whereas the former type of effect can be observed independent of essentialism. That is, accordance between two individuals from the same group in a single-group situation can imply potential consensus within the group even though its magnitude is at the minimum level (Cadinu & Rothbart, 1996). As a consequence, a contingent contrast with an ad hoc out-group may follow. This may take place without recourse to an essence-based induction. The study by Prentice and Miller (2006) does not allow us to test this possibility because it opted for the category co-variation condition while not providing a same-group condition. It should be emphasized that the underlying psychological mechanisms can be different between these situations. We expected that a full factorial design with the pair composition (i.e., same vs. different groups) crossed with observed traits of individuals (same vs. different perceptual tendencies) would allow us to examine a boundary condition for the lay theory to have an impact on the distributive estimates of those traits within each group.

2. Study 1

We aimed to examine whether a contact between distinct ethnic groups (Japanese vs. Indonesian) can facilitate the inference of

inter-ethnic comparison from a minimal interpersonal comparison. We tested the possibility that beliefs in in-group essence would account for the degree of inter-ethnic differentiation under the category co-variation situation.

The following two hypotheses were tested.

- Hypothesis 1. The inter-ethnic differentiation would be facilitated under the following two situations: (a) when an inter-ethnic difference accompanied an interpersonal difference (i.e., category co-variation situation); and (b) when interpersonal similarity was observed among in-group members (i.e., self-anchoring).
- Hypothesis 2. The inter-ethnic differentiation under the category co-variation situation would be explained by the strength of essentialist beliefs.

2.1 Method

2.1.1 Participants and design

A total of 124 Japanese undergraduate students enrolled in psychology courses at a university in Japan participated for partial course credit (Female: $n = 62$, Male: $n = 62$, $M_{age} = 19.41$). Participants were randomly assigned to one of the experimental conditions based on a 2 (Pair Composition: *between-* vs. *within-group* (GRP)) \times 2 (Perceptual Feedback: *same* vs. *different*) between-subjects design.

2.1.2 Materials

Essentialist beliefs were measured with eight items adopted from Haslam, Rothschild, and Ernst (2000) (e.g., “*To what extent do you believe that Japanese have necessary features to be ‘Japanese’?*”) (see Appendix for a complete scale).⁽¹⁾ Participants were asked to rate the extent to which they thought Japanese ethnicity was essence-based on scales from 1 to 7, anchored at the extremes for each statement.

Also, to test the inter-ethnic differentiation, we asked participants to estimate the percentage (0 – 100 %) of other Japanese students like themselves (i.e., in-group) who would have the same perceptual style as their own. Likewise, they estimated the prevalence of their own perceptual style among “foreign students” (i.e., out-group).⁽²⁾

2.1.3 Procedure

Each participant was ostensibly paired with another same-sex participant who was actually a confederate. The ethnicity of the apparent partner was experimentally manipulated. In the between-GRP condition, the partner with a distinctively Southeast-Asian appearance (e.g., wearing a Hijab in the case of a female partner) was introduced as an Indonesian (i.e., out-group) student. In the within-GRP condition, the partner was clearly Japanese (i.e., in-group).

The first experimental task assigned to each pair was a “Dot Estimation Task” (DET), which has frequently been used to cre-

ate a “minimal group paradigm” with a novel and arbitrary social categorization (Tajfel, Billing, Bundy, & Flament, 1971). Participants were presented with 10 slides (1s per slide with 3-second intervals of blank slides) on a computer display, and they were asked to write down the estimated number of dots on each slide. The actual number of dots ranged from 24 to 57. After completing the DET, each of the participants received feedback concerning their perceptual tendencies, whereby they were randomly assigned to be an “over-estimator” or an “under-estimator” of dots. Each pair was then informed that either they had the “same” (i.e., both over-estimators or under-estimators) or “different” (i.e., an over- and an under-estimator) perceptual tendency. Notice that in the “between-GRP/different” condition, two kinds of differences (i.e., one in ethnicity and other in perceptual style) appeared to co-vary whereas category co-variation was absent in the remaining conditions because at least one of the variables was constant within the pair. The “between-GRP/same” condition was created when both were assigned into the same style but they were different in ethnic memberships. The “within-GRP/different” and the “within-GRP/same” conditions were provided when two Japanese participants were informed that they held either different or the same perceptual styles, respectively. After completing these tasks, participants were given the questionnaire measuring their essentialist beliefs about the Japanese ethnic category.

2.2 Results

2.2.1 Inter-ethnic differentiation

To investigate the conditions of which interpersonal comparison is extended to intergroup comparison, we conducted a 2 (Pair Composition) \times 2 (Perceptual Feedback) \times 2 (Target: estimation of *Japanese* vs. *foreign students*) Analysis of Variance (ANOVA), with the estimated prevalence of the self-attribute to the targets as a dependent variable. The last independent variable was treated as a repeated measure. There was a main effect of target, $F(1, 121) = 18.47, p < .001, \eta^2 = .07$. Overall, Japanese participants generalized their perceptual style to their in-group Japanese ($M = 54.22$) more than to the out-group foreign students ($M = 45.53$), independently of their assigned conditions.

The main effect of target, however, was qualified by a significant three-way interaction between pair composition, perceptual feedback, and target, $F(1, 121) = 6.97, p < .01, \eta^2 = .03$ (see Figure 1). Tests of simple main effects indicated that participants of the between-GRP/different condition estimated their perceptual style to be more prevalent among the in-group than among the out-group members, thus endorsing an inter-ethnic differentiation, $F(1, 121) = 5.97, p < .05, \eta^2 = .04$. Our interpretation of this effect is that the participants attributed the observed difference in perceptual tendency between the self and the ethnic out-group member to an underlying difference between the groups. This result supported our Hypothesis 1a. In contrast, when the other person with a different perceptual style was another Japanese individual (i.e., within-GRP /different condition), the

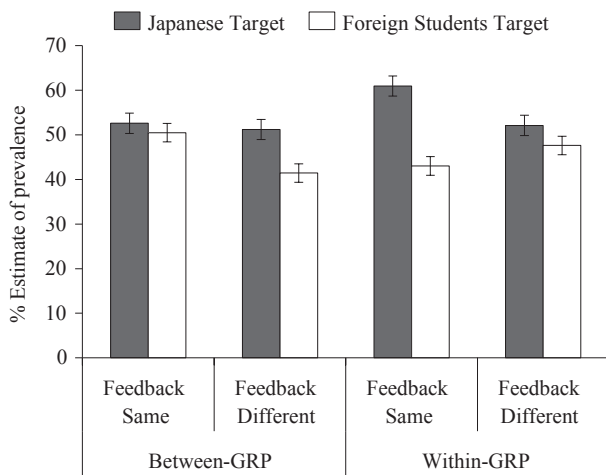


Figure 1: Mean estimated prevalence (%) of own perceptual style to In-group (Japanese) and Out-group (Foreign students) when participating either with Indonesian or Japanese confederates.

information of interpersonal difference did not have any influence on the estimate of the prevalence of each perceptual style across the target groups, $F(1, 121) = 1.28, ns$. Moreover, as a support for Hypothesis 1b, the feedback of perceptual similarity with a fellow Japanese (i.e., the within-GRP/same condition) increased the perceived inter-ethnic difference, $F(1, 121) = 20.20, p < .001, \eta^2 = .14$. Given the fact that the two individuals in the laboratory (including the self) showed the same perceptual style, the participants likely inferred that the majority of the in-group population would show the same tendency. However, apparently they did not infer that the whole population of “human kinds” would concur when the two individuals had different ethnic identities. That is, the prevalence estimation in the between-GRP/same condition did not produce any difference between the two target groups, $F < 1$.

2.2.2 Essentialist beliefs and inter-ethnic differentiation

We next investigated the relationship between the strength of the essentialist belief and the degree of inter-ethnic differentiation separately for each experimental condition. Specifically, we examined multiple correlations between these variables by using a multiple regression analysis, with the differentiation (i.e., subtracting out-group estimation from in-group estimation) as the outcome variable and the scores from the eight items of the essentialism scale as the predictors simultaneously entered into the equation. One should note that the eight items of the essentialism scale were entered simultaneously instead of having a combined mean score, due to the low reliability of the whole scale (Cronbach’s $\alpha = .52$). As predicted, the essentialist beliefs about the Japanese ethnic category accounted for a marginal but reliable proportion of inter-ethnic differentiation in the between-GRP/different condition, adjusted $R^2 = .24, F(8, 22) = 2.20, p = .07$. This finding was consistent with Hypothesis 2 in that participants used essentialist beliefs about in-group as an intuitive

explanation for the inter-ethnic difference under the category co-variation situation.

Even though there was another condition (i.e., within-GRP/same) where an inter-ethnic differentiation was observed, psychological essentialism was not associated with the effect. That is, when the intergroup accentuation was assumed to be based on an interpersonal similarity among in-group members, essentialism scores did not account for the intergroup differentiation, adjusted $R^2 = .06, F(8, 25) = 1.25, p = .31$.

In sum, a difference from an out-group member as well as a similarity to an in-group member both facilitated intergroup differentiation. However, only when the interpersonal comparison failed to provide information about an additional in- or out-group member (i.e., category co-variation situation), participants relied on their innate essentialist beliefs to assimilate their traits to the in-group and to underestimate them among the out-group.⁽³⁾

2.3 Discussion

Consistent with our prediction, the co-occurrence of interpersonal differences and ethnic differences, but not those of similarities, facilitated inter-ethnic differentiation. Also, under such a category co-variation situation, the inter-ethnic differentiation was associated with the strength of essentialist beliefs. The analyses suggest that the beliefs about the in-group essence were used as an intuitive justification for the inference when interpersonal and inter-ethnic differences apparently co-varied. Sharing the same perceptual style with an in-group member (i.e., within-GRP/same condition) had a similar impact on the inter-ethnic differentiation, but it was not related to the essentialist beliefs. These results suggest that even though inter-ethnic differentiation can result either from an observed interpersonal similarity or from a difference, the underlying psychological processes can vary depending on the differences in memberships of social categories.

The present results have provided direct evidence for the “category divide hypothesis” regarding the category co-variation situation (Miller & Prentice, 1999), for the first time in the literature. A next important question concerns to what extent we can generalize this. Specifically, it is likely that the out-group category employed in the present investigation was distinctly foreign from the participants’ perspective. Indonesian confederates in our study were markedly different from typical Japanese in a variety of ways including physical features (e.g., skin tones and facial compositions) as well as culturally (e.g., religious markers). Such distinctiveness may have elicited essentialist views concerning an ethnic difference rather easily to justify the imposed difference in the alleged “perceptual tendency.” However, “ethnicity” can be constructed socially and psychologically even when few visible differences between the potential groups are at present (Anderson, 1983; Tskhay & Rule, 2013), and psychological essentialism is often called for exactly in order to bolster the construction process (Rothbart & Taylor, 1992). Psychological essentialism becomes problematic especially when it is applied

to the explanation of a subtle (and often presumed to be innate) rather than a blatant intergroup difference. This poses a question whether such explicit social situation was necessary to activate essentialist beliefs for the category co-variation situation, or people's innate beliefs about underlying essence can naturally be inflated even under visibly subtle interethnic situation. In order to test this possibility, we conducted Study 2 by introducing an out-group that was minimally distinct from the in-group.

3. Study 2

In our second study we introduced the Chinese ethnic as the out-group target. Even though Chinese people share a number of similar physical features with the Japanese, there is a strong sense of "ethnic" distinctiveness at least from the Japanese perspective (Chen, 1984). The assumed distinctiveness is often framed in essential terms (Chen, 1984). Indeed, theories of psychological essentialism suggest that visible characteristics are not necessary to elicit essence-based interpretations (e.g., Rothbart and Taylor, 1992). Drawing on the above discussion, we examined the following two possibilities: (1) that the intergroup accentuation found in Study 1 would also be observed between these two ethnic groups with less visible differences, and (2) that the accentuation would be associated with psychological essentialism concerning Japanese ethnicity.

3.1 Method

A total of 81 Japanese undergraduate students who were enrolled in psychology courses at a university in Japan participated for partial course credit (Female: $n = 43$, Male: $n = 38$, $M_{age} = 18.68$). We adopted the same method used in Study 1 while asking Chinese (rather than Indonesian) individuals to act out the role of a "co-participant."⁽⁴⁾ The Chinese confederates were introduced with Chinese names and as holding a Chinese citizenship. Participants were randomly assigned to one of the experimental conditions based on a 2 (Pair Composition: *between-* vs. *within-GRP*) \times 2 (Perceptual Feedback: *same* vs. *different*) between-subjects design.

3.2 Results

3.2.1 Inter-ethnic differentiation

We investigated whether the feedback of perceptual difference from Chinese confederates increased the effect on inter-ethnic differentiation. We conducted a 2 (Pair Composition) \times 2 (Perceptual Feedback) \times 2 (Target: *Japanese* vs. *foreign students*) ANOVA, with the degree of estimated prevalence as a dependent variable. There was a significant main effect of Target, $F(1, 78) = 14.39$, $p < .001$, $\eta^2 = .09$, indicating that the participant's own dot estimation tendency was generally estimated to be more prevalent among the in-group Japanese ($M = 57.35$) than among the out-group foreign students ($M = 49.48$).

This, however, was qualified by the predicted three-way interaction between pair composition, perceptual feedback,

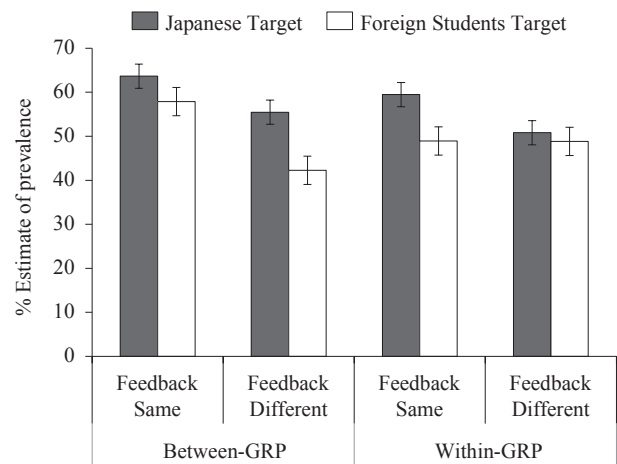


Figure 2: Mean estimated prevalence (%) of own perceptual style to In-group (Japanese) and Out-group (Foreign students) when participating either with Chinese or Japanese confederates.

and target, which approached significance, $F(1, 78) = 3.70$, $p = .058$, $\eta^2 = .02$ (see Figure 2). Tests of the simple main effects of target revealed that, as predicted, the in-group generalization was significantly greater than out-group generalization in the between-GRP/different condition, $F(1, 78) = 10.11$, $p = .002$, $\eta^2 = .10$. Our Hypothesis 1a was supported by the fact that the inter-ethnic differentiation was facilitated under the category co-variation situation. Consistent with Hypothesis 1b as well, participants in the within-GRP/same condition enhanced the prevalence estimate of their own perceptual style especially among in-group rather than among out-group members, $F(1, 78) = 6.45$, $p = .01$, $\eta^2 = .07$. Other conditions did not show any difference between the in-group and out-group targets. These results duplicated our findings from Study 1.

3.2.2 Essentialist beliefs and inter-ethnic differentiation

We next examined the relationship between essentialist beliefs and inter-ethnic differentiation. In order to do this, we examined the multiple correlations in regression analyses separately conducted for each condition. As expected, the participants' essentialist beliefs accounted for a significant proportion of total variances of the inter-ethnic differentiation, but importantly, this was the case only in the between-GRP/different condition, adjusted $R^2 = .40$, $F(8, 13) = 2.77$, $p = .05$. In the within-GRP/same condition, the estimated prevalence of the inter-ethnic differentiation was not accounted for by the essentialist beliefs, adjusted $R^2 = -.54$, $F(8, 9) = 0.25$, $p = .97$. This indicates that essentialist beliefs are not elicited in all kinds of interethnic contact situation.

Especially under category co-variation situation, inter-ethnic difference is justifiable by underlying beliefs in essence. Finally, as expected, we did not observe significant relationships between essentialist beliefs and interethnic differentiation in the within-GRP/different (adjusted $R^2 = .20$, $F(8, 12) = 1.61$, $p = .22$) or in the between-GRP/same condition (adjusted $R^2 = .04$,

$F(8, 11) = 1.09, p = .43$).

3.3 Discussion

The inter-ethnic differentiation was elicited when Japanese participants were compared to racially similar ethnic others. Essentialist beliefs accounted for the proportions of inter-ethnic differentiation under the category co-variation situation, thus replicating the finding from Study 1 and supporting our hypotheses. Consistent with the literature indicating that people construct beliefs about categories based on naïve theories rather than superficial features (Gelman & Markman, 1987; Rothbart & Taylor, 1992), Study 2 demonstrated that the essentialist beliefs about the in-group ethnicity can facilitate inter-ethnic differentiation of visibly undistinguishable ethnicities. These results not only supported our hypothesis but also broadened implication from Study 1.

4. General discussion

A major contribution of the present research came from the demonstration of the relationship between in-group essentialist beliefs and the generalization of interpersonal to intergroup differences under a certain inter-ethnic contact situation. Specifically, the strength of essentialist beliefs was associated with the intergroup differentiation particularly when an ethnic *difference* was made salient (i.e., the category divide hypothesis). Participants might have perceived an illusory correlation between a novel personality trait and ethnicities.

Nonetheless, we found that when a Japanese participant was paired with another Japanese student (i.e., within-GRP/same), the consensus between the two in their perceptual style was also projected to their in-group and led to an inflated estimate of the inter-ethnic gap, consistently across the two studies. This contact within the same ethnic group might have facilitated a simple generalization to an in-group characteristic on the basis of the unanimous in-group tendency. In line with the concept of self-anchoring effect, we interpreted that participants paid greater attention to the observed similarity within in-group members, and the similarity information was reflected well in this “within-GRP/same” condition (Krueger & Rothbart, 1990). Essentialist beliefs did not play a role, while distinctive psychological processes (i.e., the self-anchoring effect) accounted for the intergroup differentiation in this condition. Still, we may need further evidence to confirm this interpretation.

The present findings also invite further considerations on different kinds of categories that may instigate essentialist thinking. Indeed, visible demarcation such as gender categorization may readily call for essentialism, as was demonstrated by Prentice and Miller (2006). However, we have revealed that categorization of subtle and less visible ethnic groups (i.e., Japanese and Chinese) can involve essentialism to the same extent as a marked ethnic difference (i.e., Japanese and Indonesian). In other words, the visible cue was not a necessary condition for the

present participants to draw an inference about intergroup differences in a novel trait. These findings have extended a boundary condition of the co-variation situation which may facilitate intergroup differentiation, as long as perceivers have essentialist beliefs about the categories, a trait difference between visibly similar individuals who happen to be members of respective categories can readily be used as a basis for exaggeration or even fabrication of an intergroup difference. Even though our results are still correlational, they suggest the necessity of further studies to explicate the boundary conditions for the role of essentialist beliefs as a potential source of intergroup differentiations.

Not only our target ethnic categories were subtle and less visible, our evidence of trait difference (i.e., over-/under-estimators) also contained minimal information. During the experiments, we categorized participants into fictitious, novel, and valence-neutral trait types. This implies that other experimentally created ‘minimal’ categories, such as “Clay/Kandinsky” and “global/local perceptions,” may also be generalized to form group differences under the co-variation situation. More broadly, it is possible that stereotypical information (e.g., “Japanese are quiet and Chinese are talkative”) observed among individuals can more readily be generalized to interpret interethnic differences, and this may justify the existing stereotypes.

In addition, for the first time in the literature, we have demonstrated that the Japanese national category may involve essentialist beliefs. Despite the fact that national categories are often constructed on a symbolic rather than a biological basis (e.g., Anderson, 1983), they are typically regarded as being defined by some underlying essence by lay perceivers (Pehrson, Brown, & Zagefka, 2009). This is in line with the argument that Japanese are found to define their own nation with blood ties and inheritance (Chen, 1984). As a consequence of such beliefs in Japanese ethnic essence, people may justify exclusion of other ethnicities (Tsukamoto, Enright, & Karasawa, 2013). However, lay perceptions of what makes one to be identified with a nation should depend on culture and social contexts. Therefore, generalization possibilities of the present findings should be tested in future research with different ethnic groups of varying demographic backgrounds.

4.1 Limitation

Despite these distinctly new findings, limitations of the present study should also be noted. In the present study, the out-group target for the expected (non-)generalization was a broad category of “foreign students” in Japan, whereas the inference was assumed to be drawn from the encounter with a member of a specific ethnic group, namely an Indonesian or a Chinese individual, as an experimental partner. While the relationship between these countries and Japan embraces a number of idiosyncratic and extraneous factors (e.g., historical, political, and cultural backgrounds), these complexities may have hindered a generalization to a broad category, such as “foreign students.”

Another limitation relates to the specificity of the essential-

ist belief measure. Haslam et al. (2000) suggested that different social categories are perceived with different degrees of natural kind (i.e., a belief that categories are based on inherent or biological determinants) and entitativity (or “reification,” i.e., a belief that categories function as meaningful agents). However, the structural analyses of the present data did not extract the two conceptually meaningful factors. Moreover, unlike the previous studies (e.g., Bastian & Haslam, 2006), we failed to obtain a reliable measure of essentialist beliefs and thus entered each item separately to the equation to predict inter-ethnic differentiation. Although essentialist beliefs are constructed with multiple dimensions as Haslam et al. (2000) suggested, a reliable scale to accompany these different dimensions should be invented in future studies. These discrepancies between the previous and the present studies was probably due to the unique characteristic of our target “Japanese,” or the influence of Japanese cultural context. These speculations should be clarified in future studies.

4.2 Implications and conclusion

The present study provided important implications for studies on categorical perceptions and inter-ethnic relations. When essentialist beliefs are related to categorical estimation, it is known to cause unnecessary generalization of a novel attribute and exaggeration of intergroup distinction (Martin & Parker, 1995) as well as a preference for concrete and definitive languages (Carnaghi, et al., 2008). The use of essentialist beliefs is hence likely to contribute to creations and/or bolstering of stereotypes and prejudice (Bastian & Haslam, 2006; Bastian & Haslam, 2007; Hong, Chao, & No, 2009; Yzerbyt, Corneille, & Estrada, 2001; Williams & Eberhardt, 2008). The present finding identified a minimal condition for the genesis of essence-based inference concerning an inter-ethnic difference. An accentuated perception in prevalence estimation was generated even from a pair of individuals (as if they “represented” each group), particularly under a category-covariation situation.

Not only creating stereotypes and prejudiced attitudes from minimal information, the essentialist beliefs may make it difficult to reach a compromise concerning inter-ethnic differences, due to the perceived “essential” gap. A conflict between individuals of different ethnicities may be difficult to be settled if it is interpreted as an essentially immutable inter-ethnic conflict rather than an interpersonal matter. Findings of the present study imply the importance of investigating such an inductive role of essentialist beliefs. Further studies need to explore the link between the induction processes and intergroup relations, but the present study should still serve as an important step toward further clarifications of these issues.

References

- Anderson, B. (1983). *Imagined communities: Reflections on the origin and spread of nationalism*. London, England: Verso.
- Bastian, B., & Haslam, N. (2006). Psychological essentialism and stereotype endorsement. *Journal of Experimental Social Psychology, 42*, 228-235.
- Bastian, B., & Haslam, N. (2007). Psychological essentialism and attention allocation: Preferences for stereotype-consistent versus stereotype-inconsistent information. *The Journal of Social Psychology, 147*, 531-541.
- Cadinu, M. R., & Rothbart, M. (1996). Self-anchoring and differentiation processes in the minimal group setting. *Journal of Personality and Social Psychology, 70*, 661-677.
- Carnaghi, A., Maass, A., Gresta, S., Bianchi, M., Cadinu, M., & Arcuri, L. (2008). Nomina sunt omina: On the inductive potential of nouns and adjectives in person perception. *Journal of Personality and Social Psychology, 94*, 839-859.
- Chen, S. C. (1984). *Nihonjin to Cyugokujin* [Japanese and Chinese]. Tokyo, Syuei-sya.
- Clement, R. W., & Krueger, J. (2002). Social categorization moderates social projection. *Journal of Experimental Social Psychology, 38*, 219-231.
- Gelman, S. A., & Markman, E. M. (1987). Young children’s inductions from natural kinds: The role of categories and appearances. *Child Development, 58*, 1532-1541.
- Gil-White, F. J. (2001). Are ethnic groups biological “species” to the human brain?. *Current Anthropology, 42*, 515-554.
- Hamilton, D. L., Sherman, S. J., & Rodgers, J. S. (2004). Perceiving the groupness of groups: Entitativity, homogeneity, essentialism, and stereotypes. In V. Yzerbyt, C. M. Judd, & O. Corneille (Eds.), *The psychology of group perception: Perceived variability, entitativity, and essentialism* (pp. 39-60). New York, NY: Psychology Press.
- Haslam, N., Rothschild, L., & Ernst, D. (2000). Essentialist beliefs about social categories. *British Journal of Social Psychology, 39*, 113-127.
- Hong, Y., Chao, M. M., & No, S. (2009). Dynamic interracial/intercultural processes: The role of lay theories of race. *Journal of Personality, 77*, 1283-1309.
- Keysar, B., Barr, D. J., & Balin, J. A. (1998). Definite reference and mutual knowledge: Process models of common ground in comprehension. *Journal of Memory and Language, 39*, 1-20.
- Krueger, J., & Rothbart, M. (1990). Contrast and accentuation effects in category learning. *Journal of Personality and Social Psychology, 56*, 866-885.
- Martin, C. L., & Parker, S. (1995). Folk theories about sex and race differences. *Journal of Personality and Social Psychology, 21*, 45-57.
- Medin, D. L., & Ortony, A. (1989). Psychological essentialism. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 179-195). New York: Cambridge University Press.
- Miller, D. T., & Prentice, D. A. (1999). Some consequences of a belief in group essence: The category divide hypothesis. In D. A. Prentice & D. T. Miller (Eds.), *Cultural divides: Understanding and overcoming group conflict* (pp. 213-238). New York: Russell Sage Foundation.

- Mullen, B., Dovidio, J. F., Johnson, C. & Copper, C. (1992). In-group-out-group differences in social projection. *Journal of Experimental Social Psychology*, 28, 422-440.
- Mussweiler, T., & Neumann, R. (1999). Sources of mental contamination: Comparing the effects of self-generated versus externally provided primes. *Journal of Experimental Social Psychology*, 36, 194-206.
- Mussweiler, T., & Strack, F. (2000). The use of category and exemplar knowledge in the solution of anchoring tasks. *Journal of Personality and Social Psychology*, 78, 1038-1052.
- Pehrson, S., Brown, R., & Zagefka, H. (2009). When does national identification lead to the rejection of immigrants? Cross-sectional and longitudinal evidence for the role of essentialist in-group definitions. *British Journal of Social Psychology*, 48, 61-76.
- Prentice, D. A., & Miller, D. T. (2006). Essentializing differences between women and men. *Psychological Science*, 17, 129-135.
- Rothbart, M., & Taylor, M. (1992). Category labels and social reality: Do we view social categories as natural kinds?. In G. R. Semin & K. Fiedler (Eds.), *Language, interaction and social cognition* (pp. 11-36). London: Sage.
- Tajfel, H., Billings, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behavior. *European Journal of Social Psychology*, 1, 149-178.
- Tskhay, K. O., & Rule, N. O. (2013). Accuracy in categorizing perceptually ambiguous groups: A review and meta-analysis. *Personality and Social Psychology Review*, 17, 72-86.
- Tsukamoto, S., Enright, J., & Karasawa, M. (2013). Psychological essentialism and nationalism as determinants of interethnic bias. *The Journal of Social Psychology*, 153, 515-519.
- Yzerbyt, V. Y., Corneille, O., & Estrada, C. (2001). The interplay of subjective essentialism and entitativity in the formation of stereotypes. *Personality and Social Psychology Review*, 5, 141-155.
- Williams, M., & Eberhardt, J. (2008). Biological conceptions of race and the motivation to cross racial boundaries. *Journal of Personality and Social Psychology*, 94, 1033-1047.

Footnotes

- (1) The essentialist beliefs scale used in this study was based on items from Haslam et al. (2000), but translated into Japanese language. Also, the statements were modified to specify a “category” as “Japanese” or “Japanese category.”
- (2) A preliminary analysis was conducted with similar sample population (Female: $n = 13$, Male: $n = 7$, $M_{age} = 19.60$) to test group coherence of the *Japanese* and *foreign students*. It is argued that the perceived group coherence is a preliminary determinant of categorical generalization (e.g., Hamilton, Sherman, & Rodgers, 2004). Therefore, our targets were supposed to be equally coherent in our studies. It was revealed that between *foreign students* ($M = 4.08$, $SD = 1.37$) and *Japanese* ($M = 4.75$, $SD = 0.99$) in perceived group-ness was not statistically sig-

nificant, $t(19) = 1.66$, *ns*. The mean ratings on the group-ness of *foreign students* also indicated a significant deviation from the low end of the group-ness scale (i.e., 1.0). Therefore, it was suggested that *foreign students* were perceived as reliably and equally group-like as the *Japanese* target.

- (3) Essentialism scores also accounted for a significant portion of differential estimates of group distributions in the between-GRP/same condition, $R^2 = .49$, $F(8, 19) = 4.17$, $p = .005$. It appeared that the essentialist belief about Japanese ethnicity generally rendered itself to intergroup perception at the individual level as long as an out-group member was presented for comparison, regardless of the difference from or similarity to the self. However, this possibility is relatively irrelevant to the primary focus of the present study because the overall distribution estimates did not yield any difference between the two target groups at the mean level in this between-GRP/same condition (see the leftmost part of Figure 1). Still less important to the present purpose, essentialist scores showed no association with the inter-ethnic differentiation scores in the within-GRP/different condition, adjusted $R^2 = -.04$, $F < 1$.
- (4) The number of dots varied from 21 to 150 in Study 2. This modification from Study 1 (24 to 54) was administered in order to increase difficulty of the task.

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Appendix

Table 1: Essentialist Beliefs about Japanese Ethnicity (translated from Japanese to English)

Items	Statements
Necessity	To what extent do you believe that Japanese category has necessary features?
Naturalness	To what extent do you believe that Japanese category is natural rather than artificial?
Discreteness	To what extent do you believe that Japanese category has a sharp boundary of which people belong to this category or they do not?
Informativeness	To what extent do you believe that Japanese category tells a lot about people who belong to this category?
Exclusivity	To what extent do you believe that Japanese category excludes a person from other categories?
Stability	To what extent do you believe that Japanese has not and will not change over time?
Uniformity	To what extent do you believe that Japanese category allows people who belong to this category to have many things in common?
Immutability	To what extent do you believe that Japanese category does not allow its members to easily become non-members?

Note: The statements were worded based on Haslam et al. (2000). The “inherence” item of Haslam et al. (2000) was excluded for the present study because it failed to be distinguished from “necessity” when it was translated into Japanese language. The statements were rated on scales from 1 to 7, anchored at the extremes.