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Identity salience facilitates Tibetan students' group-reference effect using a remembering-knowing recognition paradigm

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Original Article

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Abstract

Social identity theory shows that individuals' social identity can become salient in some contexts and affect their cognition and behavior. Little research has focused on the impact of ethnic identity salience on the group-reference effect in the remembering-knowing recognition task. Thus, the current study aims to examine this effect of ethnic identity salience. In Experiment 1 we recruited 26 Tibetan students and 30 Han Chinese students from a predominantly Han Chinese university. In Experiment 2, we selected 26 Tibetan students and 30 Han Chinese students from a predominantly Tibetan university. Two weeks before the experiment, all participants reported the baseline level of their social identity salience. After two weeks, each participant underwent a memory test. Tibetan students at the predominantly Han Chinese university showed evidence of higher ethnic identity salience and superior recognition memory performance during a Tibetan reference encoding task than during a Han Chinese reference encoding task (Experiment 1). However, Tibetan students at the Tibetan-majority university did not show this effect (Experiment 2). In comparison, Han Chinese participants did not show any social identity salience in the two experiments. The results show that the salient social identity had an effect on the group reference effect in a remembering-recognition memory test. The current study contributes to the past literature by providing a tentative further understanding of the relationship between social identity salience and remembering judgments.

Research on the "self" has a longstanding history in the field of psychology, largely due to the fact that self-concepts can have a significant impact on a number of cognitive, social, emotional, and behavioral outcomes. Self-referencing can influence memory performance, whereby information related to the self is often better remembered than information related to other referencing conditions (Rogers, Kuiper, & Kirker, 1977; Symons & Johnson, 1997). In the last decade, researchers have gradually turned their attention of understanding the concept of the "self" from the individual level to the group level (Bennett & Sani, 2008). One valuable finding is that under certain circumstances, group-referencing tasks and self-referencing tasks can facilitate equivalent memory performance (Johnson et al., 2002). Johnson et al. (2002) confirmed that organization and elaboration might be two possible mechanisms underlying the facilitating effect of social identity salience on group-reference memory.

Given the advent of globalization, one culture is often influenced by other cultures through immigration and exchange of information. In addition, individuals are impacted directly and indirectly by multicultural influences, while also belonging to multiple social groups; this means that each individual can have a wide array of social identities that have a profound impact on daily cognition and behavior. Social identity represents a part of an individual's self-concept that derives from knowledge of membership in a social group, together with the value and emotional significance attached to such membership (Tafjel, 1981). Individuals tend to verify their social identity by classifying themselves into different social groups (Billig & Tajfel, 1973). Social identity has been revealed as marking or potentially influencing individuals' cognition (Chiao, Heck, Nakayama, & Ambady, 2006; Spencer, Steele, & Quinn, 1999), especially their performance in memory tasks (Johnson et al., 2002; Stewart, Stewart, & Walden, 2007; Yang, Liao, & Huang, 2008). Recent research has begun to focus on the social identity salience on recognition and behaviors in individual (Stewart et al., 2007). Thus, the design of current study focuses on issues related to ethnic identity in order to investigate how the salience of ethnic identity might influence memory recognition.

Conway and Dewhurst (1995) found that the self-reference effect could be measured at two levels — remembering and knowing. Remembering represents conditions in which participants are consciously able to recall an item related to specific details that appeared during a study session word list; knowing means that participants are unable to fully recall specific details of the items but have a feeling of knowing or having seen the word presented during the study session word list. Conway and Dewhurst observed that the self-reference effect could be detected during remembering judgments when participants made these judgments in relation to their

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own recollective experiences. According to Johnson et al. (2002), self-reference effect and group-reference effect may share the same underlying mechanisms. A cross-cultural study showed that Uyghur participants exhibited both self- and group-reference effects while remembering judgments, while Han Chinese exhibited only self-reference effects (Mamat et al., 2014). Therefore, in the current study, we aim to investigate the group-reference effect using remembering judgments task. We propose that an individual's ethnic identity is salient and will facilitate memory performance in a remembering judgments task related to one's own recollective experiences. In other words, identity becomes more salient when social conditions highlight the relevance or discernibility of an ethnic minority group.

The self-reference effect has been defined as information actively related to the self, which is better remembered than information that is processed in other ways (Symons & Johnson, 1997). Rogers et al. (1977) asked participants to rate 40 adjectives for one of four tasks: structural, phonemic, semantic, and self-reference. Participants were presented with one of the 40 adjective items matched with structural ("Big letters?"), phonemic ("Rhymes with an alphabet?"), semantic ("Means the same as the word?"), and self-reference ("Describes you?") questions. After completing the encoding questions, participants were asked to recall the adjectives in a subsequent free recall test. Their findings, which have been confirmed by several other studies (e. g., Brown, Keenan, & Potts, 1986; Klein, Loftus, & Burton, 1989), showed that adjectives in the self-reference condition were better remembered than were those in the other encoding conditions.

Meta-analytic reviews have been valuable in highlighting that the self-reference effect that appears to result primarily from the self represents a well-developed and often-used construct that promotes elaboration and organization of encoded information (Symons & Johnson, 1997). Further, Craik and Tulving (1975) argued that context might help increase memory elaboration when context cues are compatible, leading to an integrated memory code. In this way, words or concepts linked to self-referenced material (such as the group as a form of contextual information) should receive more elaboration during encoding and be retrieved more quickly and easily during later recall. This is because the organization of encoded information is controlled by relational processing (i.e., "word-to-word associations and associations that emerge when words share the common category label"; Klein et al., 1989, p. 854), whereas new words should then be "related" by shared categorization with the self or group.

Conway and Dewhurst (1995) applied a remembering-knowing recognition paradigm to assess self-reference effects in memory. Participants were asked to judge whether items (words describing personality traits) had appeared in a previously learned list and to indicate whether they remembered specific details about that word or if they just simply knew that it was on the list (Conway & Dewhurst, 1995). The authors found that when words were identified accurately, participants were more likely to have remembered rather than have known the word when instructed to judge the self-relevance of the item. This suggests that the self-reference effect might only have an impact when based on concrete experiences rather than mere familiarity during encoding.

Johnson et al. (2002) conducted a similar study with students at Hofstra University, comparing self-reference and semantic encoding tasks but also including a group-reference encoding condition as a comparison. For the self-reference encoding task, participants were asked: "Does this adjective generally describe you?" For the group-reference task, participants were asked: "Does this adjective generally describe Hofstra students?" (Johnson et al., 2002). The semantic task was the same one used by Rogers et al. (1977), and participants were asked: "Does this adjective mean the same as a word?" Interestingly, results showed that the group-reference encoding task led to greater recall than the semantic encoding task, with equivalent recall compared to the self-reference encoding task (Johnson et al., 2002). Johnson et al. (2002) concluded that encoding information in reference to a group could also facilitate later recall to the same extent as encoding with reference to the self. This result was partly due to the fact that, like the self, the group represents an organizational framework that offers a "category" by which incoming information can be organized and labeled for later retrieval (Johnson et al., 2002). The group-reference effect might actually be regarded as a special case of the self-reference effect (Johnson et al., 2002). Since then, a number of studies have also found the same group-reference effect in recall (Bennett, Allan, Anderson, & Asker, 2010; Grisay, Schulz, & Gebhardt, 2012; Hitti, Mulvey, & Killen, 2011; Lee, 2012).

Given previous findings regarding improved recall due to group-reference effects, elaboration should increase when group information is linked with words as a context cue. Zhao et al. (2009) argued that several previous studies on the self-reference effect did not account for the fact that social identity (group self-reference) is a crucial component for self- identification. Using event-related potential (ERP) measures, the authors found that both ingroup and individual self-referencing evoked a higher positive wave in 300 milliseconds later (an indication of the use of information processing resources) compared to outgroup referencing, suggesting that both are important during cognitive processing of incoming stimuli.

Identity salience emerges from the symbolic interactionist literature and indicates that some identities are more related or are more important to the self than others (Stryker, 1980). Stryker and Macke (1978) concluded that an individual's identity structure could be located hierarchically in self-schemas; hence, certain aspects of the self are activated or prompted to emerge more distinctly in specific contexts. For example, settings in which there is an identifiable difference between ethnic groups might make minority-majority status or ethnic identity more salient at that specific point in time. Here, ethnic identity represents a component of social identity based on the extent an individual "perceives themselves to be included and aligned with an ethnic group". By default, an individual perceives him/herself to be different or separate from other ethnic groups (Smith & Silva, 2011). For instance, ethnic identity salience has been seen among minority ethnic students who are more likely to spontaneously mention their race (compared to white English-speaking students) when asked the question, "Tell me about yourself" (McGuire, McGuire, Child, & Fujioka, 1978). This indicates that ethnic salience is a part of these students' self-concept because the context contains information about their relative perceived racial distinctiveness.

Ethnic identity is a complicated personal concept reflecting diverse aspects of identification related with membership in certain ethnic groups (Cuellar, Nyberg, Maldonado, & Roberts, 1997). Previous research has found several psychological processes shape identity salience. According to social identity theory, people automatically classify themselves and others into different social groups such as gender, religious affiliation, and ethnicity (Tajfel & Turner, 2004). However, as the process of self-categorization progresses, individuals begin to develop a preference or favoritism for their ingroup and distinguish themselves from outgroups (which may at times appear as a negative bias; Otten & Bar-Tal, 2002).

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According to Bettencourt, Miller, and Hume (1999), being part of a numerical minority, in particular, can accentuate salience and increase a sense of ingroup cohesion and bias. Stryker (1980) explained that social identity salience depends on the existence of corresponding objects in the context (role identity theory). For example, an individual always displays the identity of a parent in front of his/her children. In this way, the context provides information about the self, filtered through social stimuli. Hence, context, previous experiences and knowledge of other groups can significantly influence identity salience.

Prior literature has shown that people's identity salience could be induced and detected in natural settings. For instance, in Yang et al.'s (2008) study, they recruited Tibetan students from both a Tibetan-dominant university and a Han Chinese-dominant university. The results found that the ethnic identity of Tibetan was only salient among those Tibetan students in the Han Chinese-dominant university. Yang et al. suggest that the reason is that Tibetans are more aware of their ethnic identity in a Han-dominant environment. According to the National Bureau of Statistics of China (2003), there are 55 ethnic groups, of which by far the largest is the Han Chinese group, at over 90% of the population in China. In contrast, Tibetans comprise less than 0.5% of the total population. Social identity theory (Tajfel & Turner, 2004) states that when two or more people define themselves as belonging to a particular group, and they are acknowledged by others, then they can be considered as a distinctive group. Thus, Tibetan and Han Chinese are two distinct different ethnic groups in China. Relative to other ethnic minorities, Tibetans are usually given far more attention by Chinese researchers due to Tibet's unique geographical location and distinct religion. Tibetans are one of 55 minority nationalities in China. According to the Chinese census (2011), ethnic Tibetans comprise 90% of the total population of 3 million in the Tibet Autonomous Region. Religion — in particular,Tibetan Buddhism — is of critical importance for Tibetans and greatly affects all aspects of their lives. The unique geographic and climatic conditions of Tibet have led to a strong reliance on pastoralism (Wang, Shi, & Zhang, 2011). Tibetans speak the local Tibetan language and learn Mandarin at the elementary school. Compared to Han Chinese, Tibetans usually receive a great deal of financial support from the middle China and east China cities (Wang et al., 2011). Tibetan youngsters may leave home as early as junior high school and spend most of their school years at a city outside Tibet (Xia, 2013; Zhao, 2012). Thus, at a predominantly Han Chinese university, Tibetan students tend to form stronger associations with other ethnic Tibetans and develop a salient identity as "Tibetan".

Despite the fact that a growing number of studies have shown that people have superior memory performance for information when encoded in reference to a group or the self, few have examined the role of social identity salience on the group-reference effect using a remembering-knowing paradigm in recognition memory judgment. Therefore, we conducted two experiments to fill this gap. A previous study examined the ethnic identity salience and group reference effect in Tibetan students at a predominantly Han Chinese University (Yang et al., 2008); in this study, we selected participants in two different contexts. In experiment 1, we selected Tibetan and Han Chinese students for assessment at a predominantly Han Chinese university. In experiment 2, we selected Tibetan and Han Chinese students for assessment at a predominantly Tibetan university. We used the remembering-knowing paradigm from the self-reference effect in Rogers et al.'s memory study (1977). We supposed that the minority group (i.e., Tibetan students), would show ethnic identity salience at a predominantly Han Chinese university, and exhibit group-reference effect in a remembering judgment task. Han Chinese students served as a control group, whereby there would be no ethnic salience as part of the larger macro Chinese culture. For Tibetan students, the ingroup will represent all members of their ethnic identity group, whereas Han Chinese students will be considered the outgroup; and vice versa for Han Chinese students. The hypotheses of the current study are as follows.

Hypothesis 1: (a) Compared to Han Chinese students, Tibetan students provided with strong ethnic identity salience while living in a predominantly Han Chinese environment should show better recognition memory during an ingroup reference encoding task as compared to an outgroup reference encoding task. Furthermore, (b) this effect should be more robust for remembering than for knowing judgments.

Hypothesis 2: (a) Compared to Han Chinese students, Tibetan students not provided with strong ethnic identity salience living in a predominantly Tibetan environment should not exhibit a group-reference effect, and (b) this effect should not be different for remembering and knowing judgments.

Hypothesis 3: Compared to Tibetan students, Han Chinese students' ethnic identity will likely not be salient during the two experiments. Thus, ethnic saliency should not affect their remembering or knowing judgments.

Experiment 1

The purpose of Experiment 1 was to examine whether individuals in an ethnic minority group would remember more information in reference to their own ethnic identity than in reference to another ethnic identity when one's own identity was salient. A group-reference effect was expected for the ethnic minority group (Tibetan students), specifically for remembering judgments (Hypotheses 1a, 1b and 3).

Method

Experimental Design

In this experiment, we conducted a 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (encoding task: ingroup reference encoding task vs. outgroup reference encoding task) × 2 (judgment type: remembering judgment vs. knowing judgment) mixed factorial design. Ethnic group was a between-subject variable, while encoding task and remembering-knowing judgments were repeated-measures variables.

Participants

In this experiment, 26 Tibetan students (12 males, 14 females, with a mean age of 20 years) and 30 Han Chinese students (15 males, 15 females, with a mean age of 20 years) were randomly selected from Northwest Normal University (NNU) in Lanzhou, China, where Han Chinese is the predominant ethnic group. Tibetans are a distinct ethnic minority that comprises less than 1% of both Lanzhou's and NNU's population (China, 2003). In this context, the ethnic identity of the Tibetan students would be salient due to their minority status. Both Tibetan and Han Chinese students were matched on gender and age. Participants were divided into two groups according to their ethnic identity. Each participant

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provided written informed consent before the study was conducted, and was fully debriefed at the end of the research, in accordance with guidelines established by the committee of Protection of Subjects at Beijing Normal University.

Materials

Twenty Statements Test

The Twenty Statements Test (TST) assesses individuals' self-concept qualitatively and shows how individuals interpret their social environment differently by examining how the self-related information is structured differentially among them (Kuhn & McPartland, 1954). To complete this TST task, participants need to answer 20 statements that are displayed in the same manner: "Who am I?". The TST is widely used in culture psychology to elicit descriptions of one's self-concept through free-format responses (Carpenter & Meade-Pruitt, 2008) and to check whether individuals' ethnic identity is salient or not in their self-schema (Yang et al., 2008).

Personality trait adjectives

The experimental materials included 240 personality trait adjectives that were selected from the Modern Chinese Frequency Dictionary (Liu, 1990). A total of 120 items were divided into two lists containing 60 personality trait adjectives (List A and List B), which were generated for each participant during the study session. The other half were mixed with the first half for a later recognition test session. Each list was matched in terms of word frequency, valence, and length. An additional 20 trait adjectives were selected as buffer items during the study session, which were not included during the recognition test. For each list, five buffer words were placed at the beginning and another five buffer words were placed at the end. The personality trait adjectives have been adopted in past literature (Yang et al., 2008).

Procedure

Two weeks before the experiment, all participants were asked to complete the TST in order to examine the baseline level of their social identity salience. After two weeks, each participant experienced a study session and a recognition test session. All experiments (including personality trait adjectives, judgments, and recognition) were entered into the computer program E-Prime 2.0.

The study session

This session is an incidental learning situation that was established by informing participants that the goal of the experiment was to investigate characteristics using trait adjectives. Participants were instructed to perform reference encoding tasks, including two types of tasks: (a) an ingroup ethnicity referential processing task (participants judged how the word generally described people of their own ethnic group) and (b) an outgroup ethnicity referential processing task (participants judged how the words generally described people of other ethnic groups). All personality trait adjectives were presented on a computer screen. Each of the item lists contained 60 adjective words that randomly appeared on the screen for two seconds. A "+" was used as a fixation cue presented on the center of the screen for a half-second. The fixation cue then disappeared, followed by a black mask. Next, the following question appeared for 4 seconds: "Does this adjective describe your ethnicity or another ethnicity?" Participants responded on a rating scale from 1 (*Not at all descriptive*) to 5 (*Mostly descriptive*).

The recognition session

In this session, the experimenter explained in detail the meaning of remembering and knowing judgments to ensure that participants understood the distinction. Participants were asked to identify old or new items by pressing a recognition key. If participants judged the item as new, they pressed the "N" key (not seen during the study session), and the word disappeared from the screen. If participants judged the item as old, they pressed the "Y" key (seen during the study session), and an additional task followed. During this task, participants judged the word by saying whether they remembered (i.e., confidently remembered that the word appeared during the study session and could recall details related to the contexts about this word) or knew that they saw the word (i.e., knew they saw the word but were not certain whether the word appeared during the study session and could not recall any detailed information about the word). Participants pressed the "1" or "2" keys respectively and were given as much time as needed to make a judgment.

Results and Discussion

In this experiment, we adopted .05 as the alpha (type I error) level threshold and η^2 as the index of the effect size. The η^2 reflects the degree of correlation between experimental factors (independent variables) and dependent variables. A larger η^2 indicates larger experimental effects (Zheng, Wen, & Wu, 2011).

Ethnic identity salience check

As anticipated, Tibetan students showed higher ethnic identity salience than did Han Chinese students. There was a significant difference in our chi-square analysis, $\chi^2(1, N = 56) = 35.26$, $p = .00$. On the TST, 23 out of 26 Tibetan and 4 out of 30 Han Chinese students mentioned their ethnic identity (e.g., "I am a Tibetan girl" or "I am a Han Chinese student").

Remembering-knowing recognition analysis

Table 1 shows descriptive statistics of the mean hit ratio and hit rates for remembering-knowing judgments based on encoding task and ethnicity.

With corrected recognition rate as the dependent variable, a 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (encoding task: ingroup reference encoding task vs. outgroup reference encoding task) × 2 (judgment type: remembering judgment vs. knowing judgment) mixed factorial analysis of variance (ANOVA) revealed a significant main effect of encoding task, $F(1, 54) = 8.77$, $p = .005$, $\eta^2 = .06$. The corrected recognition rate of the ingroup encoding task ($M = .78$, $SD = .14$) was significantly higher than the outgroup encoding task ($M = .74$, $SD = .18$). The main effect of remembering-knowing was also significant, $F(1, 54) = 4.04$, $p = .023$, $\eta^2 = .05$. The corrected recognition rate under the remembering condition ($M = .44$, $SD = .25$) was significantly higher than under the knowing condition ($M = .32$, $SD = .21$). The analysis also showed a significant interaction between encoding task and participant ethnicity, $F(1, 54) = 11.36$, $p = .003$, $\eta^2 = .08$. We did a simple effect analysis. For the encoding task, it is worth noting that a simple main effects analysis demonstrated that there was a significant difference among Tibetan students, $F(1, 54) = 12.71$, $p = .002$, $\eta^2 = .10$. Tibetan students' ingroup corrected recognition rate ($M = .78$, $SD = .15$) was significantly higher than their outgroup recognition rate ($M = .69$, $SD = .22$). However, there was no significant difference among Han Chinese students, $F < 1$. For ethnicity, the simple main effects analysis showed that there was no

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Table 1. The percentage of recognition rate in remembering-knowing judgments based on ethnicity and encoding task ($M \pm SD$)

Ethnicity	Encoding task	Total	Correct "remembering"	Correct "knowing"
Tibetan	Ingroup	.78 ± .15	.46 ± .28	.32 ± .23
	Outgroup	.69 ± .22	.39 ± .26	.30 ± .23
Han	Ingroup	.77 ± .12	.44 ± .21	.33 ± .19
	Outgroup	.78 ± .13	.45 ± .23	.33 ± .20

Table 2. The percentage of recognition rate in remembering-knowing judgments based on ethnicity and encoding task ($M \pm SD$)

Ethnicity	Encoding task	Total	Correct "remembering"	Correct "knowing"
Tibetan	Ingroup	.70 ± .16	.34 ± .23	.36 ± .20
	Outgroup	.65 ± .13	.31 ± .21	.34 ± .21
Han	Ingroup	.73 ± .12	.39 ± .23	.34 ± .23
	Outgroup	.71 ± .11	.42 ± .24	.29 ± .21

significant difference within the ingroup reference encoding task, $F < 1$. There was no significant difference within the outgroup reference encoding task, $F(1, 54) = 3.01$, $p = .405$, $\eta^2 = .02$. In addition, there was no significant interaction effect among the remembering-knowing, ethnic group encoding task, $F < 1$.

For remembering responses, a 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (encoding task: ingroup reference encoding task vs. outgroup reference encoding task) ANOVA revealed that the main effect of remembering judgments was not significant, $F(1, 54) = 3.50$, $p = .935$, $\eta^2 = .03$. However, there was a significant interaction between remembering judgments and ethnicity, $F(1, 54) = 4.80$, $p = .089$, $\eta^2 = .05$. For remembering judgments, a simple main effects analysis showed a significant difference among Tibetan students, $F(1, 54) = 7.69$, $p = .002$, $\eta^2 = .06$. The Tibetan students' ingroup corrected remembering rate ($M = .46$, $SD = .28$) was significantly higher than for the outgroup ($M = .39$, $SD = .26$). However, there was no significant difference between ingroup reference encoding task and outgroup reference encoding task among the Han Chinese students, $F < 1$. For ethnicity, the simple main effects analysis revealed no significant difference in remembering judgments for the ingroup reference encoding task, $F < 1$.

The above results suggested that only Tibetan students showed a group-reference superiority effect based on higher ethnic identity saliency. Tibetan students demonstrated a significant difference in memory performance for their remembering judgments within the two encoding conditions. Specifically, ingroup reference encoding task performance was significantly higher than outgroup reference encoding task performance.

Experiment 2

In this experiment, due to their numerical majority status, Tibetan students' ethnic identity was unlikely to be salient. Thus, neither a group-reference effect, nor better memory for remembering judgments relative to the group-reference effect, was expected (Hypotheses 2a, 2b and 3).

Method

The experimental design, materials and procedures were identical to that of Experiment 1. The only difference was that the participants were different. In this experiment, 26 Tibetan students (12 males, 14 females and a mean age of 19 years) and 30 Han Chinese students (11 males, 19 females and a mean age of 20 years) were randomly selected from a Tibetan-majority context at Gansu Normal University for Nationalities (GNUN). GNUN, in Hezuo, China, was assessed as Tibetans being the predominant ethnic group. Here, Tibetans are a distinct ethnic majority group, accounting for more than 70% of Hezuo's population (China, 2003). In this respect, ethnic identity among Tibetan students was considered to be less salient than those in Experiment 1 due to their numeric majority status in this immediate environment. The Tibetan and Han Chinese groups were matched in terms of gender and age. Each participant provided written informed consent before the study was conducted, and was fully debriefed at the end of the research in accordance with guidelines established by the committee.

Results and Discussion

As in Experiment 1, we adopted .05 as the alpha (type I error) level threshold and η^2 as the index of the effect size.

Ethnic identity salience check

As anticipated, the Tibetan and Han Chinese students did not show ethnic identity salience based on the TST. There was no significant difference in the chi-square analysis between these two groups, $\chi^2(1, N = 56) = 3.25$, $p = 1.052$. For the TST, 13 out of 26 Tibetan and 14 out of 30 Han Chinese students mentioned their ethnic identity. In addition, we compared Tibetan students' ethnic identity salience in Experiments 1 and 2. There was a significant difference in the chi-square analysis, $\chi^2(1, N = 52) = 13.65$, $p = .000$. The Tibetan students from Experiment 2 showed significantly less ethnic identity salience than the Tibetan students from Experiment 1. There was no significant difference among Han Chinese students between the two experiments, $\chi^2(1, N = 60) = 2.26$, $p = .930$.

Remembering-knowing recognition analysis

As expected, results of the remembering-knowing recognition analysis in Experiment 2 also verified our hypotheses. Descriptive statistics of mean hit rates for remembering-knowing judgments for old and new items based on ethnicity and encoding task are shown in Table 2.

A 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (encoding task: ingroup reference encoding task vs. outgroup reference encoding task) × 2 (judgment type: remembering judgment vs. knowing judgment) mixed factorial analysis of variance was conducted to examine corrected recognition rates. The results revealed that there was no significant main effect of encoding task, $F(1, 54) = 2.38$, $p = .090$, $\eta^2 = .01$. There was no significant interaction between encoding task and participant ethnicity, $F < 1$. Furthermore, we only assessed remembering judgments because there was no significant main effect for the overall corrected recognition analysis in the current study, $F < 1$. In addition, there was also no significant interaction between remembering judgments and ethnicity, $F < 1$.

Overall, the above results verified that Tibetan students did not show a group-reference superiority effect, as their ethnic identity was not salient in this different environment from Experiment 1.

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General Discussion

As we expected, results from the two experiments confirmed our hypotheses. In Experiment 1, Tibetan students whose ethnic identity was salient (i.e., those who lived in a predominantly Han Chinese environment) showed significant differences in encoding memory performance, while the Han Chinese students' ethnic identity was not salient and did not show significant differences in encoding memory performance. Tibetan students' corrected recognition rate in the ingroup reference encoding task was significantly higher than their outgroup reference encoding task. It is worth noting that the Tibetan students' corrected recognition rates for remembering judgments in the ingroup reference encoding task was significantly higher than in the outgroup reference encoding task. Since Tibetan students made the remembering judgments in relation to their own recollective experiences, Tibetan students' group reference effect can be detected under the remembering judgment condition, which is supported by the previous study (Conway & Dewhurst, 1995). Therefore, we confirmed that organization and elaboration process might be two possible mechanisms of ethnic identity salience on group-reference effect in memory. In Experiment 2, the results showed that Tibetan and Han Chinese students' ethnic identity was not salient in the Tibetan dominated environment. There was no significant recognition memory performance difference between the ingroup reference encoding task and outgroup reference encoding task among Tibetan and Han Chinese. Moreover, for recognition rates of remembering judgments, there was also no significant difference between the ingroup reference encoding tasks and outgroup reference encoding task among Tibetan and Han Chinese students.

In the current study, the group reference effect was successfully tested in ethnic groups' memory of recognition, which is consistent with previous studies (Mamat et al., 2014; Yang et al., 2008). However, it should be further noted that a remembering-knowing paradigm was first adopted in the present study, which proposes that humans' remembering judgments are in close relation with their recollection experiences (Steck, Heckert, & Heckert, 2003). For Tibetan students, their remembering judgments were closely related to the self when their social identity was made salient (Experiment 1). Hence, it can be speculated that the self-reference effect and group-reference effect may share some psychological mechanisms in terms of memory processing.

However, it was also evident that the group-reference effect is likely more influenced by social context, which is consistent with former studies (Johnson et al., 2002; Chiao et al., 2006; Stewart et al., 2007; Yang et al., 2008). Compared to the individual self, the group self has unique characteristics. There are several possible explanations for this outcome. For example, the size of an ingroup can affect social identity salience. Due to similarities in cultural background, availability of services geared toward their ethnic group, and familiarity and attractiveness of ethnic customs that become part of an ethnic group's identity, ethnic minorities tend to live in closer proximity and make friends more readily within their ingroup (McGuire et al., 1978). Larger sized groups might then afford greater opportunity for ethnic minorities to create such ethnic identity bonds. Within a much larger majority group (representing a larger outgroup), this ethnic identity would become more salient. This could help explain the Tibetan students' ethnic identity salience as compared to the Han Chinese students in Experiment 1.

The aforementioned explanation does not help determine why Han Chinese students' social identity was not salient in Experiment 2 within a Tibetan-majority context. We speculated that this result might have to do with the relative position of one's ethnicity compared to the larger ethnic environment (i.e., Tibetan university vs. Han university). The relative position had a powerful impact on the salience of one's ethnic identity. Given that Han ethnicity is a dominant ethnicity in the larger environment, Han Chinese students did not necessarily perceive a salient Han identity in a Tibetan university. Indeed, this could also apply to other ethnic groups. Future research is needed to generalize the current findings in a different ethnic minority group. One explanation for this outcome could be self-categorization within a numerical minority (Han Chinese students) in the immediate environment that exists within a national ethnic majority (China) in the larger macro context. According to self-categorization theory (Turner, 1985), awareness of the self develops as we identify ourselves as part of various groups. In instances where we identify or align ourselves as part of a specific ethnic group, we become aware of similarities with our ingroup and differences with the outgroup. The tendency to categorize ourselves in a given context based on race or ethnicity could be increased by the degree to which such categories represent a comparative fit in that context, where a comparative fit is one in which ingroup and outgroup distinctions are more striking (Outten, Giguere, Schmitt, & Lalonde, 2010). In Experiment 1, when Tibetan students were a minority group in the Han-dominant context, their ethnic identity would have become more relevant due to the salience of being Tibetan in a Chinese culture. However, in Experiment 2, being the numeric majority in China could have suppressed this ethnic salience for Tibetan students. In contrast, in Experiment 2, despite being the numerical minority, Han Chinese students would still have been part of the Chinese majority on a national level (macro-level ethnic majority); therefore, group size would not necessarily represent a dominant categorizing feature. Brewer, Gonsalkorale, and van Dommelen (2013) argued that numerical representation could be offset by subjective perceptions of overlap with other categories in defining social identity. In this case, local services, government, and social media might present in Mandarin Chinese so that Han students could gain a greater sense of belongingness while standing as a numerical minority in the community. Hence, their minority status would not have been a salient component of their identity.

Similarly, the priority level of identity cues during the experimental situations is an important consideration. Johnson and Fredrickson (2005) believed that race might occupy the most advantaged level of social classification during face recognition. Using a perceptual speed test, Montepare and Opeyo (2002) confirmed that speed of perceiving racial differences is significantly faster than other social classifications (e.g., gender, age, facial expressions), representing a priority stimulus during categorization. Most minority individuals develop a bicultural identity that combines their own and other cultural identities (Arnett, 2002). In some circumstances, racial information is accessed more easily or quickly during comparisons or attributions of others (Outten et al., 2010), which can make race factors more dominant during social categorization and identity. To the extent that Tibetan students combined aspects of their own ethnic identity with a Chinese identity, ethnicity would have been more dominant during categorization when cued in Experiment 1, but not in Experiment 2 when part of a numerical majority. In contrast, in Experiment 2, Han Chinese students may not have been as sensitive to being the numeric minority within the context of being part of a national ethnic majority. In other words, these students might not have held a priority position regarding ethnic saliency in their

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working self-concept. Therefore, we speculated that minority group people's ethic identity salience might be moderated by their population size and relative status in society.

There were several limitations in the present research. First, Tibetan students were selected from a limited geographical area. In order to validate the present results, future research could select Tibetan students from Tibet University. Second, given that the current participants were sampled from university students who would have grown up in an environment which was "always" Han dominated, in future studies, it may be valuable to examine whether the language (e.g., Tibetan vs. Mandarin) people use in daily life can affect Tibetan people's identity salience. For instance, we could sample different age groups of Tibetans — those born before 1951 were more familiar with Tibetan language in daily life, while after 1951, Tibetan people started to use Mandarin. In addition, the personality trait adjectives were presented in Chinese in the two experiments, which was not the native language for the Tibetan students. While Tibetan students at this level of education would possess a working knowledge of Chinese, it is possible that the underlying concept of each adjective was subtly different for Tibetan versus Chinese students. However, the consistent findings from the two experiments (depending on varying degrees of minority or majority status) suggests that translation issues were likely not a major cause of the present results.

Future research could include additional factors, such as cultural identity and religious beliefs (Wu, Wang, He, Mao, & Zhang, 2010) to examine other potential mediating or moderating effects on social identity salience and the group-reference effect. Finally, intervention studies could be conducted to provide evidence regarding different groups in a particular region (prior to examining identity salience and remembering-knowing tasks) to assess potential changes in perceptions and judgments of ingroups and outgroups.

Conclusions

The current study contributes to our understanding of social identity and group-reference effects. One important outcome was that Tibetan and Han Chinese students showed different levels of social identity salience when in different situations depending on situational cues. Moreover, the remembering judgments were first utilized to verify the group-reference effect, which was induced by social identity salience in present study.

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