Ethnic identity salience improves recognition memory in Tibetan students via priming
Abstract

Objectives: Social identity salience affects group-reference effect in memory. However, limited studies have examined the influence of ethnic identity salience on group-reference effect among minority group people in conditions where the minority group dominates. In present research, we aim to investigate, in a Tibetan-dominant context, whether the salience of ethnic identity among Tibetan students could display an influence on their group-reference effect via priming method.

Methods: We recruited 50 Tibetan and 62 Han Chinese students from Tibetan University in Lhasa, the capital of Tibet Autonomous Region, where Tibetans were the majority. A month before the experiment, we tested the baseline of ethnic identity salience of both Tibetan and Han Chinese students using the Twenty Statements Test. In the formal experiment, we assessed the effectiveness of priming method first and then conducted a recognition memory test two week later via priming approach.

Results: The results showed that the ethnic identity both of Tibetan and Han Chinese participants was not salient in the baseline assessment. However, it was successfully induced via priming among Tibetan students. Tibetan students showed a significant group-reference effect in recognition memory task when their ethnic identity was induced via priming. In the contrary, Han Chinese students did not show increased ethnic awareness and superiority of ethnic in-group reference memory after being primed.

Conclusions: Current research provides new evidence for the influence of salience
of ethnic identity on group-reference effect, contributing to the application and extension of social identity theory among minority group people.

*Keywords:* ethnic identity, minority group, group-reference effect
Introduction

It is widely acknowledged that people possess a variety of social identities, such as those based on gender or ethnicity (Hogg & Terry, 2000). Individual’s social identity can influence their cognitive abilities, for instance, face recognition accuracy (Anastasi & Rhodes, 2005; Chiao, Heck, Nakayama, & Ambady, 2006), quantitative performance (Shih, Pittinsky, & Ambady, 1999), and memory performance (Yang, Liao, & Huang, 2008). Therefore, it is necessary to understand how different types of social identities, especially inter-ethnic identities (Evergeti & Zontini, 2006; Westin, 2010), influence cognitive abilities. China, known as a multi-ethnic country, is composed of 55 ethnic minorities and Han Chinese (National Bureau of Statistic of China [NBSC], 2001). Exploring the effect of ethnic identity on cognitive ability among minority group people may provide a theoretical support for understanding ethnic identity in different situations.

Social Identity Theory and Self-Categorization

Social identity, defined as a part of an individual’s self-concept, derives from the knowledge of their membership in a social group, along with a valuable emotional significance afforded by that membership (Tajfel, 1981). In order to allow people to better understand the social identity, Stets & Burke (2000) summarized the meaning of identity and thought that identity is composed of a series of self-views that are in a particular group or role through self-classification on basis of identity formation. Moreover, Social identity theory can elucidate how various self-categorizations are associated with the social context (Turner, Hogg, Oakes,
Reicher, & Wetherell, 1987). After the self-categorization, people may recognize that they belong to any number of social groups without adopting those classifications as social identities (Turner, 1985). Individuals are flexible to select specific social identities from various bases for self-categorization available to them at any given time (Tajfel, 1981; Turner et al., 1987), and these identities may be activated in some instances, but inactivated in others (Brewer, 1991). For example, in case of Asian-American women, when their Asian identity was activated, they would do better in math; while when their women identity was activated, they would do worse (Spencer, Steele, & Quinn, 1999).

**Social Identity and Memory**

In past few years, some researchers have found that social identity could influence individuals’ memory performance (Johnson et al., 2002; Stewart, Stewart, & Walden, 2007). Through the most wildly used method, group-reference memory (Bennett & Sani, 2008; Johnson et al., 2002; Mamat et al., 2014; Sui, Zhu, & Chiu, 2007; Yang et al., 2008), prior research has documented that the self-reference effect can generate the group-reference memory (Symons & Johnson, 1997; Rogers, Kuiper, & Kirker, 1977; Klein & Kihlstrom, 1986; Klein, Loftus, & Burton, 1989). It is argued that people’s memory performance on materials that encoded in reference to self is much better than on those non-self encoding strategies (Symons & Johnson, 1997). The self-reference effect was subsequently extended from self level to group level (Brewer, 1991; Trafimow, Triandis, & Goto, 1991; Turner, Oakes, Haslam, & McGarty, 1994). Specifically, research showed that the recall of information with
reference to one’s own group is equally as effective as the recall with reference to oneself. This result is what is referred to as the group-reference effect (Johnson et al., 2002). The group-reference effect has been known to occur in various fields and cultural contexts, with in-group members remembering more information related to their own groups (Bennett, Allan, Anderson, & Asker, 2010; Bennett & Sani, 2008; Chen & West, 2008; Ray, Mackie, Rydell, & Smith, 2008; Wagar & Cohen, 2003).

The memory paradigm, such as recognition memory (Mamat et al., 2014) and free recall (Johnson et al., 2002), used in the group-reference effect resembles that used in self-reference effect. Most of the studies have adopted the recognition memory paradigm to examine the group-reference memory effect (Mamat et al., 2014; Sui et al., 2007; Wagar & Cohen, 2003). There are many kinds of recognition memory tests, among which, “old and new” is most frequently used and therefore would be used in present work. A standard “old and new” recognition test is divided into two phases: present a series of items (old items) for participants to memorize, then mix old items together with the new items (interference) for participants to recognize (Mandler, 1980). With the guessing effect being controlled, the recognition rate is computed by the following formula:

\[
P = \frac{(C_o + C_n) - (W_o + W_n)}{O + N}
\]  

(1)

In this formula, \(P\) is the recognition rate; \(O\) is the number of old items; \(N\) is the number of new items; \(C_o\) is the number of correctly recognized old items; \(C_n\) is the number of correctly recognized new items; \(W_o\) is the number of falsely recognized old items and \(W_n\) is the number of falsely recognized new items (Meng, 1988).
Social Identity Salience and Its Connection to Memory and Cognition

According to Stryker (1980), the hierarchy in which identities are organized is based on identity salience, which is defined as a readiness to act out an identity on the basis of its properties in cognitive structure or schema. Identity salience, which enhances the positive association between individuals’ identity and academic performance (Kouli & Papaioannou, 2009), also affects their attitude (Verkuyten & Poulias, 2002) and cognitive perceptions (Kemmelmeier & Cheng, 2004). Furthermore, the influence of social identity on memory depends on the identity to which the individual subscribes (Chiao et al., 2006). Specifically, the impact of specific social identity on memory performance relies on the most salient identity in a person’s self-concept, such as ethnic identity (Sui et al., 2007; Yang et al., 2008). What is more related with the present work is that it has been shown to influence group reference memory performance among both Tibetan and Han Chinese students in Chinese natural environments (Yang et al., 2008).

Individuals’ social identity salience is not immutable; rather it can be changed through priming. For example, social identity salience is automatically altered when the individual’s social identity is salient via priming approaches (Hong, Benet-Martinez, Chiu, & Morris, 2003). Converging evidence indicates that both identity priming and social distinctiveness are able to affect identity salience by temporarily altering the hierarchical ordering of an individual’s various identities (Burke & Reitzes, 1991). In the extant research, the Twenty Statements Test (TST) has been a valid measure to detect social identity salience (Kuhn & McPartland,
Ethnic Identity and Its Connection to Memory and Cognition

Among a variety of social identities, many researchers had focused on ethnic identity. Phinney (1990) defined that ethnicity is a central element of people’s self-definition and may further be an important part of their social identity. Numerous studies found that ethnic identity referred to the integration of one’s attitudes, feelings, cognitions, behaviors, and perceptions of the degree of affiliation and belonging that one had toward his or her ethnic group (Berry, Kim, Power, Young, & Bujaki, 1989; Phinney, 1992; Ting-Toomey et al., 2000). Moreover, studies showed that people’s ethnic identity could affect their memory performance (Yang et al., 2008; Mamat et al., 2014).

Special social contexts enable a more natural integration of individuals’ social identities into their self-concepts (Burke & Reitzes, 1991). In Yang et al.’s (2008) study, the results demonstrated that Tibetan students at one predominantly Han Chinese University showed higher ethnic identity salience and better memory performance for trait adjectives encoded in reference to Tibetans than Han Chinese (study 1). Additionally, they observed that ethnic identity was not salient among Tibetan students when they lived in a predominantly Tibetan social environment. In their study 2, there was no difference of memory performance between Tibetan-referential processing and Han-referential processing conditions. However, in both Han predominant and Tibetan predominant regions, the ethnic identity of Han Chinese students was not found to be salient, which is inconsistent with previous
study (McGuire, McGuire, Child, & Fujioka, 1978) revealing that there would be automatic salience in conditions where they are among the minority group. Yang et al. (2008) held that the results of Han participants could be explained by the fact that Han identity was considered as a default ethnic category in China, which were often ignored by those who had it. Moreover, Yang et al. (2008) proposed that for Han Chinese who live among the majority in Tibetan habituated university, they would pay little attention to their ethnicity and found Tibetan identity to be invisible.

However, few studies examine the influence of ethnic identity salience on group-reference effect among minority group people in conditions where those minority group people dominate. Seen from the total population in China, Tibetan is a typical minority group. However, Han is a majority group and the ethnic identity is only observed within minority groups. Building on previous finding that the salience of individuals’ identity could be induced by priming approach (Hong et al., 2003), the present research proposed that we could use priming method to induce the salience of ethnic identity among those Tibetan students. We predicted that, in a Tibetan-dominant context, Tibetan students’ ethnic identity salience would display influence on their group-reference effect. However, Han participants would not show group-reference effect since their ethnic identity was not salient.

**Overview of Current Study**

In present study, both Tibetan and Han Chinese students were recruited from Tibetan University in Lhasa, the capital of Tibet Autonomous Region, where Tibetan was the majority group. At the beginning of study, the baseline of ethnic identity
salience both in Tibetan and Han Chinese students were assessed. If their ethnic identity were not salient, there would be chances to induce their ethnic identity salience. To test the salience of ethnic identity in their self-concept, TST was adopted. We predicted that people among minority group would report more information associated with their own ethnic identity in TST when primed to be salient. In addition, when Tibetan students’ ethnic identity was primed to be salient, they would be able to remember more information in reference to their own ethnic group than Han Chinese group. Based on assumptions above, the following hypotheses were devised:

Hypothesis 1: (a) Compared to Han Chinese students, Tibetan students will report more information related to their own ethnic identity in the TST in the ethnic priming condition than control condition, and (b) for Han Chinese, there would be no significant difference in reported information related to their own ethnic identity between ethnic priming condition and control condition.

If this hypothesis could be verified, it would be considered that the priming method was effective only for the Tibetan students. Therefore, their performance on recognition memory task in reference to their own ethnic group would be enhanced. Then, we further predicted that:

Hypothesis 2: (a) The manipulation of salience of ethnic identity would improve Tibetan students’ performance on recognition memory of in-group referential processing task compared with out-group referential processing task, and (b) there would be no significant difference of performance on recognition memory between
in- and out-group referential processing tasks among Han Chinese students.

**Methods**

**Participants**

Fifty Tibetan students (21 female and 29 male, mean age = 21 years) and sixty-two Han Chinese students (31 female and 31 male, mean age = 20 years) were recruited from Tibetan University. Participation in the study was voluntary in nature. The visual acuity of all subjects was normal or corrected to normal, and none had participated in a similar study before. The Tibetan and Han Chinese students were well matched in both age and gender. This study was reviewed and approved by the Committee of Protection of Subjects at Beijing Normal University. All participants were offered written informed consent before the study, and were fully debriefed at the end of the study according to the established guidelines of the committee.

**Experimental Design**

A 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (ethnic identity priming: salient vs. control condition) × 2 (orientating task: in-group vs. out-group) mixed experimental design was conducted, with both ethnic group and ethnic identity salience as between-subjects variables and orientating task as within-subjects variable. For Tibetan participants, the out-group referred to Han Chinese; for Han Chinese participants, the out-group referred to Tibetans. The order of the orientating task was counterbalanced for each condition.

**Materials**

Twenty Statements Test (TST).
The widely used test, formulated by Kuhn and McPartland (1954), was used to examine whether social identity was salient in participants’ self-concepts. In TST, which is a paper-and-pencil test, there are 20 blank question items stated like “Who am I”. If one wrote more about his ethnic identity, he would therefore be considered as more salient in his ethnic identity.

**Word lists.**

The stimuli used in current study included 240 personality trait adjectives in Chinese, which were selected from the Modern Chinese Frequency Dictionary (Liu, 1990). The adjectives are those frequently used by the Tibetan and Han Chinese students to describe people’s characteristics in their daily lives. Half of the words were presented in the learning session, and all of them were presented in the memory recognition task. The two halves of words were well matched on its valence, frequency, and length. In the learning session, each participant was presented with two lists (Lists A and B), each consisting of 60 positive and 60 negative trait adjectives counterbalanced for frequency and length. Ten additional trait adjectives were included as buffer items but would not appear in the recognition task or later analyses.

**Procedure**

There were three stages in this study, including the baseline assessment, effective assessment of priming, and the recognition memory test. The baseline assessment for ethnic identity salience was performed one month earlier among Tibetan and Han Chinese students. There was a two-week interval between the
effective assessment of priming and recognition memory test via priming approach. All the participants first completed the effective assessment of priming method and then the recognition memory test via the priming approach.

**Baseline assessment stage.**

In this session, we tested whether the ethnic identity of both Tibetan and Han Chinese students were salient in their self-concepts through TST in a month before the formal experiment.

**Effective assessment of priming stage.**

In order to check the effectiveness of priming method used in the two-week-later recognition memory test, Tibetan students were randomly assigned to either in-group priming condition (n = 25) or control condition (n = 25). Han Chinese students were also assigned in random to one of the two conditions. Therefore, there would be 31 participants in the experimental training condition and 31 in the control condition. Those who were in the in-group priming condition were asked to write down the characteristics of the in-group that distinguished them from other ethnic groups, including famous people, cultural heritage, manners and customs, and ethnic ethos. Those who were in the control condition were only asked to write down a description of an electronic product. Participants were given 10 minutes to complete the writing task in both in-group priming condition and control condition. After finishing writing, all participants were asked to complete the TST. Two coders who were blind to the experiment condition independently coded the responses. Each coder recorded one score by reading the participants’ response, and then the two coders would compare
their scores of the coding to make sure that their results of the same participant would be consistent with each other. If participants offered more self-descriptions relevant to their ethnic membership than any other traits, the in-group ethnic identity would be taken as salient.

**Recognition memory test stage.**

After two weeks of effective assessment of priming stage, a recognition memory test was designed in this session for those in both conditions. In this stage, before the recognition memory task, both Tibetan and Han Chinese students received the same priming method with the same duration in both priming and control condition. After finishing the priming task, all participants were informed that the purpose of the learning session was to encode the characteristics of trait adjectives. They were then given a practice session before the formal task.

In the learning session, a learning situation was established by informing the participants that the goal of the research was to encode the characteristics of trait adjective. They were instructed to perform two types of tasks: (a) for those in the in-group referential processing task, they need to make judgments on whether the words presented on screen generally described people of their own group; (b) for those in the out-group referential processing task, they need to judge whether the trait words described people of the other group (for Tibetan participants, the out-group was Han Chinese; for Han Chinese participants, it was Tibetan).

The participants in the ethnic priming condition and control condition were randomly divided into two groups. For each group, one half of the participants
performed the in-group referential processing task with List A first, and then the out-group referential processing task with List B; the other half of the participants performed the out-group referential processing task with List A first, and then the in-group referential processing task with List B. All stimuli in each word list were randomly presented, item by item, on a normalized computer screen for 4 seconds. Participants were asked to rate how consistent each word was with the characteristics of Han Chinese or Tibetans on a 5-point Likert scale ranging from 1 (not at all descriptive) to 5 (mostly descriptive). To ensure that all participants focused on the task, a fixation point was presented at the center of the screen for 0.5 seconds. Each word was presented for 2 seconds, and then a black masking stimulus was showed at the same location and meanwhile a 5-point Likert scale for that item was displayed for 2 seconds. This meant that participants had 4 seconds to rate each word. After an inter-stimulus interval of one second, participants rated the next word following the presentation of the fixation point. In a given trial, when a trait word appeared, participants responded to the item using a numeric keyboard to indicate their judgment. Before the recognition test, to distract participants’ attention, a 3-minute interference task of oral addition was imposed.

The recognition test began 3 minutes after the interference task finished. In the recognition session, the 120 previously learned words and an additional set of 120 new words were presented randomly. Participants were instructed to judge whether the words presented in this phase they had observed in the learning session. For each test item, participants were given as much time as they desired to make judgments
with the computer keyboard.

**Results**

**Baseline TST Analysis**

We used a Mann-Whitney U test to analyze differences in baseline TST responses between Han Chinese \(N = 62\) and Tibetan students \(N = 50\) in the first stage of this study. There was no significant difference between these two groups, \(U(112) = 340.50, p > .05\).

In the TST, seven out of the fifty Tibetan students mentioned their own ethnic identity, and three out of sixty-two Han Chinese students mentioned their own ethnic identity. Responses included “I am a Tibetan\-Han Chinese person,” “I am a Tibetan\-Han Chinese girl,” “I love the Tibetan group,” and “I hope that my ethnic identity of the Tibetan group would be better.” However, the low number of student responses featuring ethnic identity suggests that it was not salient in the students’ self-concepts.

**Manipulation Checks**

In order to assess the effectiveness of ethnic identity activation manipulation employing priming in the present study, a 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (ethnic identity priming: salient vs. control condition) analysis of variance (ANOVA) was conducted to analyzed responses on the TST. Consistent with our expectations, a significant interaction effect between participants’ ethnic group and ethnic identity priming was found: \(F(1, 110) = 7.02, p < .01, \eta^2 = .06\). Specifically, the frequency that Tibetan participants mentioned their ethnic identity in the ethnic
identity salience condition ($M_{salience} = .68, SD_{salience} = .67$) was significantly higher than those in the control condition ($M_{control condition} = .31, SD_{control condition} = .47$). Moreover, the frequency that Tibetan participants mentioned their ethnic identity in the priming condition ($M_{salience} = .68, SD_{salience} = .67$) was significantly higher than Han participants in the priming condition ($M_{salience} = .03, SD_{salience} = .18$). The results showed that Tibetan students had higher ethnic identity salience than Han Chinese students and that they would recall more information related to their ethnic identity when primed with ethnic identity. However, for Han Chinese participants, there was no significant effect between ethnic identity salience condition ($M_{salience} = .03, SD_{salience} = .18$) and control condition ($M_{control condition} = .10, SD_{control condition} = .31$). These results indicated that ethnic identity only increases Tibetan students’ in-group information related to their own ethnic identity, and the ethnic identity priming method is an effective method for future research.

**Dependent Variable Analysis**

We have computed the recognition rate using the formula (1). With recognition rate being the dependent variable, a 2 (ethnic group: Tibetan vs. Han Chinese) × 2 (ethnic identity priming: salient vs. control condition) × 2 (orientating task: in-group vs. out-group) mixed factorial ANOVA was conducted. The descriptive statistics were presented in Table 1.
Table 1. Mean of recognition rates for different ethnic groups and encoding tasks (M ± SD)

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Ethnic Priming</th>
<th>Orientating Task</th>
<th>Recognition Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tibetan</td>
<td>Salience</td>
<td>In-group</td>
<td>.892 ± .012</td>
</tr>
<tr>
<td></td>
<td>Salience</td>
<td>Out-group</td>
<td>.805 ± .013</td>
</tr>
<tr>
<td></td>
<td>Non-salience</td>
<td>In-group</td>
<td>.801 ± .012</td>
</tr>
<tr>
<td></td>
<td>Non-salience</td>
<td>Out-group</td>
<td>.787 ± .013</td>
</tr>
<tr>
<td>Han Chinese</td>
<td>Salience</td>
<td>In-group</td>
<td>.864 ± .011</td>
</tr>
<tr>
<td></td>
<td>Salience</td>
<td>Out-group</td>
<td>.861 ± .012</td>
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<tr>
<td></td>
<td>Non-salience</td>
<td>In-group</td>
<td>.862 ± .011</td>
</tr>
<tr>
<td></td>
<td>Non-salience</td>
<td>Out-group</td>
<td>.859 ± .012</td>
</tr>
</tbody>
</table>

The results revealed a significant main effect of orientating task, $F (1, 108) = 4.67, p < .05, \eta^2 = .04$. The in-group orientating task scores ($M = .88, SD = .01$) were significantly higher than those of the out-group orientating task ($M = .85, SD = .01$). Moreover, there was a significant main effect of ethnic group, $F(1, 108) = 9.42, p < .01, \eta^2 = .04$. The Tibetan students’ recognition rates ($M = .77, SD = .01$) were significantly higher than Han Chinese students’ recognition rates ($M = .74, SD = .01$).

There were significant interactions between ethnic group and ethnic identity priming conditions, $F (1, 108) = 7.56, p < .01, \eta^2 = .06$; for ethnic group and orientating task, $F (1, 108) = 8.16, p < .01, \eta^2 = .07$; for ethnic priming and orientating task, $F(1, 108) = 7.45, p < .01, \eta^2 = .07$; and for ethnic group, ethnic priming, and orientating task, $F(1, 108) = 6.06, p < .05, \eta^2 = .05$ (shown in Figure 1).
Figure 1. Differences in memory recognition scores for Tibetan and Han Chinese students

No significant interaction was found for ethnic identity priming and orientating task on the recognition rate for Han Chinese participants. For Tibetan participants, orientating task had a significant effect on ethnic priming condition, $F(1, 108) = 32.85, p < .001, \eta^2 = .15$. The recognition rate of the Tibetan students in the in-group ethnic referential processing task ($M = .89, SD = .01$) was significantly higher than that in the out-group ethnic referential processing task ($M = .81, SD = .01$), but this effect was not observed in the control condition, $F < 1$.¹

**Discussion**

The results strongly supported our hypothesis that Tibetan students would show a significant group-reference effect in recognition memory task when they were

¹ Better recognition memory should be associated with overall faster reaction times. In this study, with the reaction time being the dependent variable, the analysis revealed a significant main effect of orientating task, $F(1, 108) = 20.74, p < .001, \eta^2 = .16$. The reaction times of in-group orientating task ($M = 636.24, SD = 5.17$) were significantly faster than those of the out-group orientating task ($M = 659.39, SD = 5.12$). There was a significant interaction among orientating task, ethnic identity priming conditions and ethnic group, $F(1, 108) = 8.76, p < .01, \eta^2 = .08$. For Tibetan participants, there was a significant effect on group reference memory effect in ethnic identity salience condition, $F(1, 108) = 52.26, p < .001$. The reaction times of ethnic identity priming condition in the in-group ethnic referential processing task ($M = 570.08, SD = 47.97$) was significantly faster than that in the out-group ethnic referential processing task ($M = 652.92, SD = 58.34$), but this effect was not observed in the control condition, $F < 1$. For Han Chinese participants, there was also no significant effect on group reference memory in ethnic identity salience condition, $F < 1$. In addition, there was no significant effect on group reference memory effect in control condition, $F(1, 108) = 2.54, p > .05$. 
induced an increasing salience of their ethnic identity. In the present study, participants were selected from Tibetan University in Lhasa, the capital of Tibet Autonomous Region, where Tibetan is a predominant group (defined as a minority group in this study is in reference to the total China) and Han Chinese is a minority group (defined as a majority group in China). As expected, analysis of TST responses indicated that both Tibetan and Han Chinese participants’ ethnic identities were not salient in their self-concepts in the baseline assessment. In second session, according to the ethnic priming manipulation check, Tibetan students showed high salience of their ethnic identity and reported their own ethnicity significantly more than Han Chinese students in TST. The result demonstrated that the Tibetan students’ ethnic identity was successfully salient in their self-concepts when the priming approach was conducted.

These results are in line with previous findings that the social identity can be induced salient via priming approach (Bennett & Sani, 2008; Chen & West, 2008; Tanti, Stukas, Halloran, & Foddy, 2011; Wagar & Cohen, 2003; Zou, Morris, & Benet-Martínez, 2008). Our results are also consistent with the McGuire et al.’ (1978) study when Tibetan were considered as an ethnic minority group in the whole China. Furthermore, current study confirmed that the ethnic identity of Tibetan students is a significant component of their overall self-concepts and that the influence of social identity salience on the group-reference effect in a recognition memory task does exist for an ethnic minority group.

By priming ethnic identity of both Tibetan and Han participants, we further
verified that ethnic identity salience was associated with minority status only (Wagner, Camparo, Tsenkova, & Camparo, 2008). Our results suggested that, the ethnic identity of Tibetan students was not salient in normal contexts, but it became prominent in one’s self-concept after priming. Therefore, the Tibetan students categorized themselves and others into different groups in terms of ethnic identity. This viewpoint parallels with the notion of the social identity theory (Tajfel, 1981; Turner, 1985; Turner et al., 1987).

On the contrary, Han Chinese students did not show increased ethnic awareness and superiority of ethnic in-group reference memory, even in the priming condition. There are two possible explanations for this. First, the Han Chinese students were among the minority group (i.e., Han Chinese) in present context. However, in a broader perspective, Han Chinese were among the majority across China. Tibetan students in Tibet were part of the majority (i.e., Tibetans), but when put them to the horizon of whole China, they were in a typical minority group. Second, the two groups of students often participated in separate activities on campus and there are no frequent social cues to remind them of temporal minority identity in daily life. Therefore, the limited social exposure to Tibetans might have little effects on ethnic identity salience for Han Chinese students. Taken together, the limited cross-ethnicity interaction and non-distinctive salience of group identity could interpret why Han Chinese students lack salience in their minority ethnic identity. Therefore, Han Chinese students would rather consider themselves as a national majority in total China than admit their minority identity in Tibetan-dominant
context, even in the priming condition. All these suggest that the Han Chinese students’ ethnic identity was not prominent in their self-concepts.

Consistent with Johnson et al.’s work (2002), current research demonstrated that the group-reference effect could be regarded as an extension of self-reference effect, although we did not directly investigate the mechanism underlying the effect of social identity salience on memory. A meta-analytic review of the literature (Symons & Johnson, 1997) suggests that the self-reference effect is an important aspect of social identity because the self is a well-developed and frequently used construct that promotes the elaboration and organization of encoded information, which offered another support for current findings. We speculated that organization and elaboration might be the mechanism responsible for the facilitating effect of ethnic identity salience on the group-reference effect in memory. Tibetan students lived in an environment where the dominant group was Tibetan and their ethnic identity was automatically activated in everyday life. Therefore, consistent with Stets and Burke’s (2000) viewpoint, Tibetans tend to define themselves in terms of their own ethnic group categorization and ethnic identity, which then become the most frequently activated component of their self-concepts. The TST provides an appropriate framework for organizing information related to Tibetan identity and facilitating its subsequent retrieval.

Due to understanding of the self from different perspectives, Yang et al. (2008) maintains that the self is not a single psychological structure, but can be divided into different dimensions or components. People can distinguish their individual self from
the social, collective self and the interplay between these independent selves that are all frequently expressed in social and cultural spheres. Furthermore, the knowledge about the individual’ social identity can be evoked by the situations and then influence their cognitions. In our study, participants were asked to rate the personality trait adjectives to the group people, which disposed individual to recall self associated with their group (Bennett et al., 2010).

Previous studies showed that the implicit evaluative processes (Amodio & Devine, 2006; Amodio & Hamilton, 2012) and the situation (Payne et al., 2006) can influence memory. Conceptual priming, however, seems to be based on the execution of semantic memory (Tulving & Schacter, 1990). We showed that the rating task is as an implicit approach to evoke the information related with people’ self and social identity. Especially, after priming people from minority ethnic group, their individual ethnic identity knowledge would be strong associated with the experiences and emotions about these personality trait adjectives. Moreover, the autobiographical memory is influenced by emotions about some physiological activity during learning (Conway & Pleydell-Pearce, 2000). In present study, we found that the Tibetan student’s ethnic identity was salient when induced. In addition, specific semantic memory system can account for category-specific impairments (Farah & McClelland, 1991). Therefore, we confirmed that the emotions of the in-group can be evoked via priming and subsequently facilitate the in-group reference memory performance among Tibetan students. Individuals can recall specific characteristics of the self when they need to focus on some of those
characteristics in special situations (Fossati et al., 2003; Kouli & Papaioannou, 2009), just as the Tibetans in this study. His or her minority ethnic identity would be highlighted in the structure of his or her self-concept when one needs to recall the attributes of his or her own group, as Tibetan students did in current study.

**Limitations and implications**

Several caveats and limitations need to be noted as well. First, the chosen adjectives on Chinese personality trait expresses in Chinese mandarin language that may be unfamiliar to some Tibetan students. The Tibetan and Han Chinese students may have different emotions for the most chosen adjectives on Chinese personality trait and influences later recall. Second, the prediction that the ethnic identity salience’s influence on group reference effect was confirmed in Tibetan group. It is necessary to test it in other minority groups. Third, the current experiment investigated the causal relationship between ethnic identity salience and recognition memory in Tibetan students by priming approach. However, it did not explore the psychological mechanism underlying the effects of ethnic identity salience on Tibetan students’ recognition memory performance.

According to these limitations mentioned above, we could make further improvements in future study. First, the degree of familiarity for those chosen adjectives and the emotions when evaluate the adjectives on Chinese personality trait could be controlled in future studies. Second, we will examine the results of this study in other minority groups, such as Uygur ethnic group in China. Third, the underlying psychological mechanism in social identity salience’s influence on
group-reference effect can be further explored in future study. We propose that the ethnic essentialism may be a mediator explaining the relationship between ethnic identity salience and group-reference effect. Therefore, individual’s ethnic essentialism could be further investigated whether it can account for the effects the ethnic identity salience on group-reference effect.

**Conclusions**

Collectively, current study found that the Tibetan students’ performance on recognition memory task in in-group referential processing was significantly better than that in out-group referential processing when their ethnic identity was salient. As a typical minority ethnic group in China, Tibetans are easily to be highlighted of their ethnic identity across different situations because the ethnic identity salience was tightly associated with their minority status. However, Han Chinese students did not display any significant difference between in- and out- group referential processing after being primed. Therefore, the ethnic identity of minority group rather than majority group is a significant component of their overall self-concepts and they can automatically categorize themselves and others into different groups in terms of ethnic identity. To conclude, current research provides evidence for the across-situational influence of ethnic identity salience on group-reference effect, contributing to the application and extension of social identity theory among minority group people.

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