

Linguistic and Cultural Differences in the Father Reference Effect: Evidence from Retrieval-Induced Forgetting

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Abstract

Employing the retrieval-induced forgetting paradigm, this study investigated the memory characteristics of Uyghur and Han Chinese individuals under self-reference, father-reference, and other-reference conditions. The results revealed that Uyghur participants did not exhibit retrieval-induced forgetting under either self-reference or father-reference conditions, but showed retrieval-induced forgetting under general other-reference conditions, indicating that father-reference processing and self-reference processing possess an advantage over general other-reference processing among Uyghur individuals. In contrast, Han Chinese participants only failed to exhibit retrieval-induced forgetting under self-reference conditions, demonstrating retrieval-induced forgetting under both father-reference and other-reference conditions, suggesting that only self-reference processing demonstrates an advantage over general other-reference processing among Han Chinese participants, while father-reference processing did not exhibit the same advantage. These findings indicate that different languages and cultures influence individuals' self-construction, with father appearing only in the self-construction of Uyghur individuals. Whether the father's name co-occurs with the given name in the name structure constitutes an important factor influencing the differences in self-construction between the two ethnic groups.

Full Text

Language and Cultural Differences in Father-Reference Effects: Evidence from Retrieval-Induced Forgetting

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Abstract

This study employed the retrieval-induced forgetting paradigm to examine memory characteristics among Uyghur and Han Chinese participants under self-reference, father-reference, and other-reference conditions. The results revealed that Uyghur participants showed no retrieval-induced forgetting under either self-reference or father-reference conditions, but did exhibit retrieval-induced forgetting under general other-reference conditions. This indicates that father-reference processing, like self-reference processing, enjoys a processing advantage over general other-reference processing among Uyghurs. In contrast, Han participants only failed to show retrieval-induced forgetting under self-reference conditions; both father-reference and other-reference conditions produced retrieval-induced forgetting effects. This suggests that only self-reference processing holds a distinct advantage over general other-reference processing for Han participants, while father-reference processing does not demonstrate a similar advantage. These findings demonstrate that different languages and cultures influence individual self-construction, with father figures appearing only in Uyghur self-constructs. The presence or absence of paternal names alongside given names in naming structures represents a crucial factor underlying self-construction differences between these two ethnic groups.

Keywords: retrieval-induced forgetting; self-referential processing; father-referential processing; patronymic linkage naming system

Classification: B842; B849:C91

1. Introduction

Memory and forgetting are interdependent. The process of information retrieval itself can induce forgetting: previously retrieved items become more accessible in subsequent tests, while items sharing the same retrieval cues but not previously retrieved become more difficult to recall. This phenomenon is known as retrieval-induced forgetting (RIF) (Anderson, Bjork, & Bjork, 1994, 2000; Huddleston & Anderson, 2012; Hulbert, Shivde, & Anderson, 2012). However, retrieval-induced forgetting has boundary conditions: self-related content receives elaborate processing that does not inhibit self-related material, thus preventing retrieval-induced forgetting for self-relevant information (Macrae & Roseveare, 2002; Zhou, Zhang, Ma, Li, & Xia, 2015). Self-referential processing constitutes one such boundary condition, representing fundamentally a self-advantage effect. This occurs because the self is a relatively unique cognitive structure, and self-related material holds particular significance for individuals.

Self-referential processing lies at the core of the self (Northoff et al., 2006). The special nature of self-referential processing has been confirmed not only in behavioral experiments (Macrae & Roseveare, 2002) but also in cognitive neuroscience research. Mu and Han (2010) found that compared to other-referential processing, self-referential processing elicited stronger P200 in the right prefrontal region and stronger P300 in the frontoparietal region with longer latencies. Ng, Han, Mao, and Lai (2010) discovered that self-referential processing activates the ventromedial prefrontal cortex (VMPFC) more than other-referential processing.

The self is a product of culture. Culture shapes the self, and cultural differences create self-differences. Eastern and Western selves differ substantially: Western selves are independent, with self-construal primarily referencing one's own thoughts and feelings rather than others, including only the "self" and representing an independent self (Markus & Kitayama, 1991). Eastern selves are interdependent, emphasizing the dependent relationship between self and others, with sociocentricity, holism, collectivism, and relationality. The self includes not only oneself but also important others with intimate relationships, representing an interdependent self (Mareba · Maimaiti & Wu, 2017; Markus & Kitayama, 1991; Plaut, Markus, Treadway, & Fu, 2012; Xia, Niu, Kou, & Jin, 2016). Zhu and Zhang (2001) used R/K judgment tasks to examine self-memory effects, finding that Chinese participants showed equivalent recall performance under self-reference and mother-reference conditions, demonstrating that mother is included in the Chinese self. Yang and Zhu (2004) combined self and retrieval-induced forgetting, finding that both self-referential and mother-referential processing inhibited related material and eliminated retrieval-induced forgetting, indicating that mother-reference also constitutes an important boundary condition for Chinese retrieval-induced forgetting, with the implication that mother is included in the Chinese self. Uchida, Ueno, and Miyamoto (2014) found that compared to other-reference conditions, Japanese university students showed no retrieval-induced forgetting under self-reference, good friend reference, or family member reference conditions, proving that certain important others are included in the Japanese self. Huff, Yoon, Lee, Mandadi, and Gutchess (2013) found that Asian Americans showed stronger neural activity when referencing mother than when referencing self. Han, Ma, and Wang (2016) found that Chinese participants showed similar medial prefrontal activity when judging traits of self, spouse, and children compared to general other-reference conditions. Zhu, Zhang, Fan, and Han (2007) found that in Chinese cognition, self and intimate others like mother share the ventromedial prefrontal region (VMPFC), whereas this region in Westerners represents only the self, not mother. Thus, despite differences in ethnicity, economy, and geography among Japanese, Asian Americans, and Chinese, their shared influence by Eastern culture produces similar self-processing advantages.

As an important factor influencing human psychology, culture is primarily transmitted through language and behavioral patterns applied in communication among individuals living in the same era who influence each other (Chen, Benet-

Martínez, & Ng, 2013). Samovar and Porter consider culture as shared ideals, values, and behavioral norms embodied in language and behavior patterns (Huang, 2017). However, culture is a broad concept requiring examination of more specific cultural content to identify factors through which culture influences the self.

Language is both the core and carrier of culture, as well as the way humans possess the world (Zhang, Yu, & Qiao, 2016). French philosopher and anthropologist Claude Lévi-Strauss (1995) noted that language is a result of culture, a part of culture, and a condition for culture. Language is not merely a product or component of culture but also its foundation and prerequisite. The linguistic relativity hypothesis provides an excellent explanation for “language as a condition for culture.” This theory posits that language determines cognition and shapes thought. Language provides predetermined rules for humans to understand the world and think about problems. Language not only determines speakers’ non-linguistic cognitive processes and changes their thinking patterns, but different languages also have different ways of determining cognition (Zhang, Liu, & Tan, 2005). Language influences cognition through linguistic markers, categories and prototypes, certain mediating mechanisms, metaphors and linguistic iconicity, context, and theory (Zhang, 2015). Language also influences personality. When bilinguals speak a particular language, their personality shifts toward the prototype of the group using that language (Chen et al., 2013; Luna, Ringberg, & Peracchio, 2008; Marian & Kaushanskaya, 2004). Language embodies cultural concepts and theories about personality; when individuals master a language, they also master the cultural theories and perspectives about personality represented by that language (Zhang et al., 2016). Due to this determinative role of language, philosopher Ludwig Wittgenstein (2013) stated: “The limits of my language mean the limits of my world.”

Language is a system composed of vocabulary and grammar (Gao & Shi, 1963). Names, as special vocabulary, are symbolic representations of individuals and important components of the abstract self, serving social classification functions such as clarifying blood relations, distinguishing gender, differentiating marital status, and separating social ranks. Influenced by language and culture, different ethnic groups have different name structures. Han Chinese names place the surname before the given name, reflecting the long-standing family history and the clan concept that surname outranks given name. Han society has always centered on father-son relationships, with children taking their father’ s surname, representing the clan. Western name structures differ from Han Chinese. English-speaking countries typically use “given name + surname,” with the given name first and surname last, opposite to Han Chinese practice, reflecting emphasis on the individual. Some other ethnic groups have a special name structure—the patronymic linkage naming system.

The patronymic linkage naming system represents the transition from matrilineal to patrilineal clan society. Based on patriarchal authority and patrilineal blood ties, this system connects the father’ s name with the child’ s name in

naming practices, with the child' s name then connected to the grandchild' s name, thereby establishing bloodline genealogy and property inheritance rights. Patronymic linkage takes various forms: complete father' s name connecting to complete child' s name, part of father' s name connecting to child' s name, connecting only to several generations of paternal ancestors, or continuing infinitely from the earliest ancestor (Wang & Wang, 2017). Many of China' s ethnic minorities use patronymic linkage naming systems, including Yi, Hani, Bai, Uyghur, Jingpo, Miao, Yao, Lhoba, Kyrgyz, and Russian ethnic groups.

Uyghur names typically adopt a “given name + father' s name” structure, with both names appearing together. For example, “Maimaiti (given name) · Aishan (father' s name).” The Uyghur patronymic linkage system emphasizes the blood relationship and importance between individual and father. Han Chinese emphasize ancestors, stressing clan continuity and bloodline inheritance. The surname, as a family symbol, possesses heritability and unity, while the given name is arbitrary and individualized. These differences raise the question: Does this linguistic difference in name structure lead to self-differences? Han Chinese names contain paternal surname and given name, while Uyghur names contain both given name and father' s name. The given name serves as a unique marker of self and an important basis for distinguishing individuals within a group. For Han Chinese, the surname is not only paternal but also clan-based, containing not just father but condensing the entire family. The Han surname functions as a collective noun representing generations of fathers and their living descendants—what might be termed “ancestors” and “clan.” However, for Uyghurs, most surnames are simply the father' s name, representing only the father, who plays an important role in Uyghur names.

Research demonstrates that names are intimately connected to individuals' “inner self” (He & Zhu, 2010; Koole & Pelham, 2003; Watson, 1986) and enjoy cognitive processing advantages (Wang, 2014). For instance, recognizing one' s own name exhibits a “cocktail party effect” —it can be easily detected and recognized even under conditions of inattention (Arnell, Shapiro, & Sorensen, 1999; Harris, Pashler, & Coburn, 2004; Moray, 1959; Sun, Li, Jia, & Zhang, 2013; Wolford & Morrison, 1980; Wood & Cowan, 1995). One' s own name can capture attention and influence behavior even unconsciously (Alexopoulos, Muller, Ric, & Marendaz, 2012; Pfister, Pohl, Kiesel, & Kunde, 2012). Cognitive neuroscience research also confirms the uniqueness of processing one' s own name: own-name processing is closely related to P300 (Berlad & Pratt, 1995; Folmer & Yingling, 1997; Holeckova, Fischer, Giard, Delpuech, & Morlet, 2006; Tacikowski & Nowicka, 2010). One' s own name significantly activates different brain regions (Carmody & Lewis, 2006; Tacikowski et al., 2011; Tacikowski, Brechmann, & Nowicka, 2013). Thus, one' s own name is closely related to the self, serving as a specific symbol distinguishing individuals from others and an extension of the self that influences self-related cognitive processing (Yang, 2006; Yang & Huang, 2007; Zhang, 2014).

We hypothesize that if culture influences the self, language represents an im-

portant pathway. Name, as a special linguistic form, may differently affect self-construction across ethnic groups through name structure. For Uyghur participants, because given names and fathers' names co-occur in their names, these names have higher co-occurrence frequency in daily life, strengthening the connection between given name (representing self) and father's name (representing father) and leading Uyghur participants to incorporate father into their self-construction. For Han participants, because paternal surnames encompass numerous individuals with father being only one among them, surname-given name co-occurrence does not affect individual self-construction, and father may not be incorporated into the self. This study employed the retrieval-induced forgetting paradigm to compare Uyghur and Han participants under father-reference, self-reference, and other-reference conditions. If father is included in individuals' self-constructs in both ethnic groups, father-reference conditions should produce memory effects similar to self-reference effects, eliminating retrieval-induced forgetting. If father is not included in individuals' self-constructs in both ethnic groups, father-reference conditions should not produce self-reference-like memory effects, and retrieval-induced forgetting should occur.

2. Method

2.1 Participants

Ninety Uyghur undergraduate students from Xinjiang Normal University participated, including 34 males and 56 females with a mean age of 21.45 years. Their native language was Uyghur, and they were proficient in Chinese, having begun Chinese language study in kindergarten or first grade. All had passed the MHK (Chinese Proficiency Test for Minority Nationalities) Level 4 and the Putonghua Proficiency Test, enabling fluent communication and reading in Chinese.

Ninety Han Chinese undergraduate students also participated, including 32 males and 58 females with a mean age of 20.75 years. All were from Xinjiang and had lived there since at least their grandparents' generation, with normal or corrected-to-normal vision. Uyghur participants all had "given name + father's name" structures, while Han participants all had "surname + given name" structures. The 90 Uyghur and 90 Han participants were assigned to self-reference, father-reference, and other-reference conditions, with 30 participants per group. Participants were pseudo-randomly assigned to complete tasks individually under each condition while balancing gender across experimental conditions (Uyghur: father group 11 males, self group 11 males, other group 12 males; Han: father group 9 males, self group 12 males, other group 11 males), age (Uyghur: $M_{father} = 20.85$ years, $M_{self} = 21.90$ years, $M_{other} = 21.60$ years; Han: $M_{father} = 21.35$ years, $M_{self} = 20.85$ years, $M_{other} = 20.05$ years), grade (all second- and third-year undergraduates), and Chinese proficiency.

2.2 Materials

Thirty-two two-character nouns representing indoor and outdoor objects were used, with 16 items for each category. The first character of each noun was unique across all words in the study. Materials were presented in “category-exemplar” format, such as “indoor items-wardrobe” and “outdoor items-umbrella.” These materials were adapted from Zhou et al. (2015). Familiarity ratings for indoor and outdoor object nouns were collected from 30 Uyghur and 30 Han university students who did not participate in the main experiment. Ratings used a 7-point scale (7 = very familiar, 1 = very unfamiliar). Mean familiarity ratings were: M_Uyghur-indoor = 4.81 ± 0.60 , M_Uyghur-outdoor = 4.45 ± 1.03 ; M_Han-indoor = 4.77 ± 0.60 , M_Han-outdoor = 4.40 ± 1.06 . *t*-tests revealed no significant differences: $t(15)_{\text{indoor}} = 1.23$, $p > 0.05$; $t(15)_{\text{outdoor}} = 0.67$, $p > 0.05$. Word frequency ranged from 0.06 to 149.64 occurrences per million (based on Cai & Brysbaert, 2010), with M_indoor = 7.38 ± 6.61 and M_outdoor = 20.04 ± 38.59 , $t(30) = 1.29$, $p > 0.05$. The difference in word frequency between indoor and outdoor items was not significant, $F(1, 30) = 1.67$, $p > 0.05$.

The 32 two-character words were divided into three categories: (1) Retrieval practice items: 8 word pairs where both category names and exemplar first characters appeared during the retrieval practice phase, labeled “Rp+” ; (2) Items where category names appeared during retrieval practice but exemplars did not: 8 word pairs from the same category as Rp+ items but not practiced, labeled “Rp-” ; (3) Items where neither category names nor exemplars were practiced: 16 word pairs labeled “Nrp.” Four additional practice word pairs were included.

2.3 Design

A 2 (ethnicity: Uyghur/Han) \times 3 (processing condition: self-reference/father-reference/other-reference) \times 3 (item type: Rp+/Rp-/Nrp) mixed design was employed. Ethnicity and processing condition were between-subjects variables, while item type was a within-subjects variable.

2.4 Procedure

The classic retrieval-induced forgetting paradigm was used, consisting of four phases:

- (1) **Study Phase:** Word pairs were presented on a computer screen for 5 seconds each in “category name-exemplar” format (e.g., “indoor items-wardrobe,” “outdoor items-umbrella”). While viewing each pair, participants in the four groups were instructed to imagine themselves, their father, or another person (Yao Ming) encountering the object at a particular time or place, and to verbally report the imagined scenario in a complete sentence including subject, predicate, object, and a location or

time adverbial (e.g., “I saw a wardrobe yesterday,” “Father bought an umbrella at the mall,” “Yao Ming saw a soccer ball on the playground”).

- (2) **Retrieval Practice Phase:** After studying the nouns, participants completed retrieval practice. The experimenter randomly selected one category (indoor or outdoor items) and presented 8 nouns from that category in “category name-exemplar” format, but with only the first character of the exemplar shown (e.g., “indoor items-wardr___,” “outdoor items-umbre___”). Participants were required to recall and write the missing character on an answer sheet. Under each processing condition, half the participants practiced with indoor items and half with outdoor items. Each word pair was presented for 5 seconds and repeated three times.
- (3) **Distractor Phase:** Following retrieval practice, participants performed mathematical operations with two- or three-digit numbers presented randomly on the computer for 3 minutes.
- (4) **Recall Phase:** Participants were asked to freely recall and write the names of indoor and outdoor items presented during the study phase, in any order and without time limit, until they stopped responding.

3. Results and Analysis

Participants’ overall recall rates and recall rates for Rp+, Rp–, and Nrp items were calculated. The facilitation rate was computed as Rp+ minus Nrp, and the retrieval-induced forgetting rate as Rp– minus Nrp.

3.1 Overall Recall Rate

Mean recall rates are presented in Table 1 . A 2 (ethnicity: Han/Uyghur) \times 3 (processing condition: self-reference/father-reference/other-reference) mixed-design ANOVA revealed a significant main effect of ethnicity, $F(1, 174) = 17.96$, $p < 0.001$, $p^2 = 0.09$, 95% CI = [-0.09, -0.03]. Uyghur participants’ overall recall rate was significantly lower than that of Han participants. The main effect of processing condition was not significant, $F(2, 174) = 0.64$, $p > 0.05$, nor was the ethnicity \times processing condition interaction, $F(2, 174) = 1.17$, $p > 0.05$. These results indicate that although Uyghur participants’ overall recall was significantly lower than Han participants’ , processing conditions did not differentially affect overall recall rates across ethnic groups.

3.2 Retrieval Facilitation

Recall rates for Rp+, Rp–, and Nrp materials are shown in Table 1 and Figure 1 [Figure 1: see original paper]. A 3 (processing condition: self-reference/father-reference/other-reference) \times 2 (item type: Rp+/Nrp) ANOVA for Uyghur participants showed a significant main effect of item type, $F(1, 87) = 365.24$, $p < 0.001$, $p^2 = 0.81$, 95% CI = [0.48, 0.55], with Rp+ recall significantly higher than Nrp. Neither the main effect of processing condition, $F(2, 87) = 2.38$, $p >$

0.05, nor the item type \times processing condition interaction, $F(2, 87) = 0.58$, $p > 0.05$, was significant. For Han participants, the main effect of item type was significant, $F(1, 87) = 435.97$, $p < 0.001$, $p^2 = 0.83$, 95% CI = [0.44, 0.53], with Rp+ recall significantly higher than Nrp. Neither the main effect of processing condition, $F(2, 87) = 1.55$, $p > 0.05$, nor the item type \times processing condition interaction, $F(2, 87) = 2.29$, $p > 0.05$, was significant. These results demonstrate that retrieval practice significantly facilitated memory for both ethnic groups. Because Rp+ materials were practiced during retrieval practice, their recall rates were significantly higher than baseline Nrp materials.

3.3 Retrieval-Induced Forgetting

A 3 (processing condition: self-reference/father-reference/other-reference) \times 2 (item type: Rp-/Nrp) ANOVA for Uyghur participants revealed no significant main effect of item type, $F(1, 87) = 0.21$, $p > 0.05$, no significant main effect of processing condition, $F(2, 87) = 0.21$, $p > 0.05$, and no significant interaction, $F(2, 87) = 1.91$, $p > 0.05$. For Han participants, the main effect of item type was significant, $F(1, 87) = 51.49$, $p < 0.001$, $p^2 = 0.37$, 95% CI = [-0.16, -0.10]; the main effect of processing condition was significant, $F(2, 87) = 4.11$, $p < 0.05$, $p^2 = 0.09$; and the item type \times processing condition interaction was significant, $F(2, 87) = 9.13$, $p < 0.001$, $p^2 = 0.17$. Simple effects analysis showed no significant difference between the two item types under self-reference conditions, $t(29) = -1.30$, $p > 0.05$; significant differences under father-reference conditions, $t(29) = -3.04$, $p = 0.005$, $d = 0.14$, 95% CI = [-0.17, -0.03]; and significant differences under other-reference conditions, $t(29) = -13.02$, $p < 0.001$, $d = 0.23$, 95% CI = [-0.26, -0.19].

To analyze whether retrieval-induced forgetting effects emerged under the three processing conditions for both ethnic groups, paired-sample t-tests compared Rp- and Nrp recall rates in each condition. If Rp- recall was significantly lower than Nrp recall, retrieval-induced forgetting was considered present. Results showed that for Uyghur participants, differences were not significant under self-reference, $t(29) = 0.45$, $p > 0.05$, or father-reference conditions, $t(29) = 0.60$, $p > 0.05$, but were significant under other-reference conditions, $t(29) = -2.09$, $p < 0.05$, $d = 0.40$, 95% CI = [-0.12, -0.01]. For Han participants, differences were not significant under self-reference conditions, $t(29) = -1.30$, $p > 0.05$, but were significant under both father-reference, $t(29) = -3.04$, $p = 0.005$, $d = 0.14$, 95% CI = [-0.17, -0.03], and other-reference conditions, $t(29) = -13.02$, $p < 0.001$, $d = 0.23$, 95% CI = [-0.26, -0.19]. These findings indicate that Uyghur participants showed no retrieval-induced forgetting under self-reference or father-reference conditions but did show retrieval-induced forgetting under other-reference conditions (Figure 2 [Figure 2: see original paper]). Han participants showed no retrieval-induced forgetting under self-reference conditions but did show retrieval-induced forgetting under both father-reference and other-reference conditions (Figure 3 [Figure 3: see original paper]). Thus, only Uyghur participants failed to show retrieval-induced forgetting under father-reference

conditions, demonstrating memory effects similar to those under self-reference conditions. This suggests that father has been integrated into the self among Uyghur participants, whereas father has not been integrated into the self among Han participants.

3.4 Controlling for Output Interference

Some research suggests that when retrieval-induced forgetting effects occur, they may result not from inhibition of R_{p-} items during retrieval practice of R_{p+} items, but from output interference (Criss, Malmberg, & Shiffrin, 2011; Tulving & Arbuckle, 1963). That is, practiced items (R_{p+}) may be recalled first during the recall phase, thereby interfering with recall of unpracticed items (R_{p-}) from the same category, resulting in lower recall rates than baseline. In other words, R_{p-} items are recalled later than R_{p+} items, creating interference. To rule out this possibility, we adopted Macrae and Roseveare's (2002) method: under conditions where R_{p-} recall was significantly lower than N_{rp} , we calculated each participant's mean output position for R_{p+} and R_{p-} items, subtracted them, and divided participants into high and low difference groups to test whether R_{p-} minus N_{rp} recall rates differed significantly between groups. Results showed no significant differences: $F_{Uyghur-other}(1, 28) = 2.34, p > 0.05$; $F_{Han-father}(1, 28) = 3.40, p > 0.05$; $F_{Han-other}(1, 28) = 0.09, p > 0.05$. This indicates that the elimination of retrieval-induced forgetting among Uyghur participants under other-reference conditions and among Han participants under father-reference and other-reference conditions was not due to output interference.

4. Discussion

This study used the retrieval-induced forgetting paradigm to investigate self-construction characteristics among Uyghur and Han university students, comparing retrieval-induced forgetting differences between the two ethnic groups under father-reference, self-reference, and other-reference conditions to reveal the relationship between name structure and self-construction. Results showed that only Uyghur participants failed to show retrieval-induced forgetting under father-reference conditions, reflecting cultural differences in father-reference processing.

4.1 Overall Recall Rate and Retrieval Facilitation

No significant differences emerged in overall recall rates between Uyghur and Han participants across the three reference conditions. Self-reference recall rates were not higher than father-reference or other-reference rates, indicating that from the perspective of recall rates, self-referential processing did not show an advantage. This result is consistent with previous research (Markus & Kitayama, 1991; Yang & Zhu, 2004; Zhou et al., 2015). The significant retrieval facilitation effect across both ethnic groups and all three reference conditions also

aligns with previous research as a common finding in retrieval-induced forgetting studies. Retrieval practice strengthens the association between cues and target words, making them easier to recall during the test phase.

4.2 Cultural Differences in Father-Reference Conditions: Variations in Male Status

The study found that only Uyghur participants showed father-reference effects in retrieval-induced forgetting, whereas Han participants did not. This indicates that father-reference processing differs from general other-reference processing for Uyghur participants but not for Han participants.

Multiple factors may account for father-reference processing differences between the two ethnic groups in retrieval-induced forgetting, with gender culture being one. Both Uyghur and Han societies are patrilineal with “male superiority” characteristics. However, Uyghur men’s social status is higher than Han men’s, and Uyghur fathers hold higher family status than Han fathers. Uyghur patriarchy and male authority are more pronounced, with social power constructed around men and religion featuring patriarchal characteristics that emphasize men’s absolute dominance. A Uyghur proverb states: “Man is woman’s second ‘Khuda’ (i.e., Allah).” This means that in traditional Uyghur culture, men can determine women’s fate, and women must obey men’s commands (Han, 2016). Traditionally, when a husband says “talaq” (meaning divorce) three times, the marital relationship ends. Thus, Uyghur men possess absolute authority in society, and Uyghur fathers hold absolute authority in families. Today, Uyghur women still bear primary responsibility for housework, while economic power largely remains in husbands’ hands. In contrast, although Han traditional culture also features “male superiority”—such as advocating the “Three Cardinal Guides” [“ruler guides subject, father guides son, husband guides wife” (Dong Zhongshu, *Chunqiu Fanlu*)] and the “Three Obediences” [women should “obey father before marriage, obey husband after marriage, obey son after husband’s death” (*Yili · Sangfu · Zixiazhuan*)]—the May Fourth Movement, multiple anti-feudal campaigns, and particularly the founding of New China have dramatically elevated Han women’s status, with gender equality gradually becoming mainstream. Han women commonly work outside the home, have their own income, and men also share housework, with women often controlling family finances. In Xinjiang, Uyghur men frequently tease Han male colleagues about being “hen-pecked” or “afraid of their wives.” This may represent an important cultural reason for father-reference differences in retrieval-induced forgetting between the two ethnic groups.

4.3 Linguistic Differences in Father-Reference Conditions: Name Structure Influences Self-Construction

Comparatively, name structure represents a more important and direct cause of self-construction differences between the two ethnic groups. Because names are extensions of the self and name structures differ dramatically between ethnic

groups, we infer that the deep-level culture reflected in different name structures shapes different self-compositions through language. Due to long-term use of the patronymic linkage system, Uyghurs have integrated father into their self-structure, making father part of the self and thus eliminating retrieval-induced forgetting in experiments, producing father-reference effects.

Han name structures share similarities with and differences from the Uyghur patronymic linkage system. Similarities include the sequential combination of surname and given name, with the clan-distinguishing name equivalent to the father's name in the linkage system. Differences include that Han clan names remain fixed and unchanging, while personal names vary according to generational lineage (Yang, 1956). Han participants' lack of father-reference effects relates to sharing only clan surnames with fathers. According to Han clan systems, names serve not to identify individuals but to integrate families. Generational characters in names connect individuals to the entire clan, clarifying one's position, relationships, rights, and obligations within the family, far exceeding personal name significance (Wang, 2016). Therefore, Han names embody traditional Han clan concepts, representing a family-based value orientation that reflects the will of parents and the group (Xu, 2008). Han individuals view themselves and their fathers as sharing the same clan, both being important existences within the clan. Meanwhile, influenced by the one-child policy, Han extended families have gradually disappeared, with nuclear families becoming dominant. With the introduction of Western egalitarian concepts after reform and opening-up, absolute paternal authority has faded among Han youth. Consequently, father's importance in Han self-construction has greatly diminished.

Familiarity also influences father-reference effect differences between Uyghur and Han participants in retrieval-induced forgetting. Previous research shows that familiarity, intimacy, living environment, and personal factors affect self-construction (Qi & Zhu, 2002; Yang & Zhu, 2004; Zhu & Zhang, 2002; Yang, 2013). To date, regardless of research paradigm, mother consistently enters individuals' selves in studies of Chinese and Eastern selves. Zhou et al. (2015) found that imams also enter Muslim believers' selves. Father's inclusion in the self has shown unstable results. Why? Combining this study's results with previous research, we propose that both importance and familiarity are important influencing factors, with familiarity essentially reflecting the effect of connection frequency or co-occurrence frequency. The Uyghur patronymic linkage system creates high co-occurrence rates between father's name and given name, and frequent co-occurrence strengthens the connection between self and father, thereby significantly impacting self-construction. In contrast, Han culture considers directly addressing elders' given names or sharing names with elders taboo or disrespectful. In ancient Han society, name avoidance was a unique phenomenon: directly speaking or writing the names of rulers and elders was avoided to show respect. The general principle of name avoidance was: "avoid names of the respected, the intimate, and the virtuous" (*Gongyangzhuan·Mingongyuannian*). Avoiding parents' and grandparents' names constitutes Han "family avoidance" or "private avoidance." In social interactions, one should also

avoid elders' names in others' families; otherwise, it is considered extremely impolite. For example, Li He's father's name was Jin, which shares pronunciation with "jin" (advance), so Li He could not take the imperial examination throughout his life. Du Fu's father's name was "Du Xian," so to avoid the character "xian," Du Fu's poems never used the word "xian." Du Fu's mother's name was Haitang, so Du Fu wrote no poems about crabapple flowers. Han name avoidance did not strengthen the connection between father and self but rather reinforced distinction. Under the combined influence of importance and familiarity, Uyghurs incorporate father into the self, whereas father is not included in the Han self.

4.4 The Essence of Name Influence on Self: Language Labels Affect Self-Cognition and Self-Categorization

As a language label, names serve important social functions. Names indicate family origins and reflect individual status. This is particularly true in ethnic groups using patronymic linkage systems. For example, the Yi people's patronymic genealogy combined with family branch names serves as the primary marker distinguishing Yi family groups and affinal relationships. In Yi regions, whether making new friends or meeting old relatives, one must remember family branch names and genealogies. If one cannot clearly state one's family branch surname, the clan will not accept them; if one cannot distinguish relatives' surnames, relatives will not accept them. Memorizing family branch surnames and reciting patronymic genealogies is essential for Yi people. Some scholars argue that the extensive family branch network and affinal network formed through patronymic linkage constitute the main structural system of traditional Yi society (Wang & Wang, 2017).

Names also serve important cognitive functions. Names influence people's cognition and expectations of individuals (Erwin, 1993; Li, 2017; Mehrabian & Piercy, 1993), affect others' attractiveness ratings (Zhang, Liu, & Ye, 2006), and influence individuals' self-expectations and self-cognition (Garwood, Cox, Kaplan, Wasserman, & Sulzer, 1980; Hensley & Spencer, 1985; Mehrabian & Piercy, 1993). Names affect academic achievement (Bruning, 1972), personality development (Emma, 1997), and self-esteem (Carlin, 2004). Research shows that one's own name receives priority processing (Zheng, 2014) and elicits special brainwave amplitudes (Berlad & Pratt, 1995; Holeckova et al., 2006). Comatose patients show P300 responses to their own names (Fischer, Dailler, & Morlet, 2008; Pratt, Berlad, & Lavie, 1999). P300 is related to attention, indicating that one's own name easily captures attention. Compared to famous or unfamiliar names, one's own name significantly activates the left prefrontal and superior temporal cortices (Carmody & Lewis, 2006), demonstrating the close relationship between one's own name and the self. Because Uyghurs use patronymic linkage with father's name and given name appearing together, father becomes inseparable from the self. In self-construction, father thus exerts considerable influence, and father-reference processing shows similar advantages

to self-reference processing in retrieval-induced forgetting. For Han individuals, their names contain paternal surname and given name, where paternal surname represents a collection of fathers that more easily connects the self to ancestors and clan members rather than specifically to father. Ancient Han people, regardless of their actions, first considered whether they would “bring honor to ancestors,” “disgrace ancestors,” or “bring disaster to descendants,” reflecting ancestor worship. Therefore, for Han people, father-reference processing shows no processing advantage, and father does not appear in individual self-construction.

The important cognitive function of names relates to self-categorization. Names are special vocabulary and personal labels. The *Liji • Tan Gong Shang* states: “Given name in infancy, courtesy name at capping.” Kong Yingda’s commentary explains: “A name is added three months after birth...At age twenty, when one has the way of being a father, friends and peers can no longer call him by name, so a courtesy name is added at the capping ceremony.” Human cognition features categorization—identifying similarities among different things in the objective world to form concepts, thereby reducing cognitive load and achieving cognitive economy (Wang, 2008). Self-categorization is the categorization of self-cognition. For example: Where do I come from? Whose child am I? Which group do I belong to? Self-categorization requires classification criteria, typically represented by vocabulary expressing concepts. Language consists of vocabulary. Names are language labels that importantly promote category learning and serve as important classification bases. Language labels facilitate category induction processes (Freedman & Assad, 2011; Hu, Liu, Chen, & Mo, 2010; Long et al., 2012). Liu and Meng (2015) found that higher representation levels of language labels produce faster categorical perception processing. The automaticity of language processing inevitably involves language in other cognitive processes. The activation of names as linguistic symbols promotes activation of self-concept representations, thereby affecting self-categorization (Zhao, 2001). For Uyghurs, influenced by patronymic linkage, they tend to categorize themselves with their fathers. Through names, they repeatedly remind themselves and others: “I am father’s child.” In contrast, Han people tend to categorize themselves into surnames, which do not specifically refer to father but include all fathers and clan members in the clan— “ancestors” and all their living descendants.

In summary, culture’s influence on the self can be realized through language. As language labels, names affect self-cognition and self-categorization. Patronymic linkage (co-occurrence of father’s name and given name) importantly influences self-formation and development. However, in China, besides patronymic linkage and surname + given name structures, many ethnic minorities (e.g., Mongolian) have names containing neither surname nor father’s name, only given names such as “Dede Ma” and “Tenger.” For these ethnic groups, what status does father hold in the self? Future research using EEG or neuroimaging could investigate different ethnic groups with different name structures, presenting participants’ own names, fathers’ names, and general others’ names to examine whether different event-related potentials or brain regions are activated. Additionally, as an important other in collectivist culture, mother holds important status in the

self. What is the mother-reference effect in Uyghur self-construction?¹

5. Conclusions

- (1) For Uyghur participants, both father-reference and self-reference processing eliminated retrieval-induced forgetting effects, indicating that father is included in the Uyghur self. For Han participants, father-reference processing produced retrieval-induced forgetting effects similar to other-reference processing, indicating that father is not integrated into the Han self.
- (2) Language is an important pathway through which culture influences the self. Names as language labels affect self-cognition and self-categorization, and patronymic linkage importantly influences self-formation and development.

¹ This study collected data under mother-reference conditions but did not report them for two reasons: (1) The study focused primarily on father as an important other closely connected to the self, and since the most important cultural difference between Uyghur and Han regarding father lies in name structure differences, mother was not the primary factor of investigation. (2) The data were not ideal: under mother-reference conditions, the difference between Rp- and Nrp was marginally significant for Han participants ($p = 0.065$) and non-significant for Uyghur participants. This would suggest mother is not included in the Han self (inconsistent with previous research) while mother is included in the Uyghur self (difficult to explain through “co-occurrence frequency”). Therefore, mother-reference processing was not included in the report.

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