

## Psychological Evidence of Cultural Integration among Chinese Ethnic Groups: Results from Situational Experiments with Han and Naxi Participants

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### Abstract

“Valuing the strong and young while devaluing the old” was a common characteristic of ancient northern nomadic peoples in China, whereas “respecting the old and caring for the young” was a custom of the ancient Huaxia people. The “barbarianization” of the Han people and the “Sinicization” of ethnic minorities represent manifestations of cultural fusion in Chinese history, which centrally embodies the principle of “I in you, you in me” during the formation of the Chinese nation. In modern China, renowned historians such as Fu Sinian, Gu Jiegang, and Chen Yinke have conducted excellent research, providing substantial evidence from archaeology, history, linguistics, and cultural studies. What psychological evidence exists for the cultural fusion of the Chinese nation? Through two experiments, this study examined the willingness of Han people from Hebei and Naxi people from Yunnan of different ages to engage in protective and helping behaviors toward individuals of different ages across various contexts. The results revealed that middle-aged and elderly Naxi individuals from Yunnan exhibited stronger willingness toward protective and helping behaviors for the elderly, whereas middle-aged and elderly Han individuals showed stronger willingness toward such behaviors for middle-aged people. This indicates that in the long-term process of cultural fusion, influenced by the Huaxia culture of “respecting the old and caring for the young,” the Naxi people’s consciousness of respecting the elderly has strengthened; influenced by the “valuing the strong and young while devaluing the old” custom of ethnic minorities, Han people from Hebei have also acquired “valuing the strong” characteristics. Middle-aged and elderly individuals from both Hebei Han and Yunnan Naxi groups placed children first in protective and helping behaviors regardless of context, which both reflects the traditional Chinese ethical value of emphasizing offspring and is influenced by the “fewer children” phenomenon

brought about by modernization. High school students from both ethnic groups prioritized protecting or helping children or fathers in most contexts, indicating that differences in character orientation between ethnic groups are diminishing in contemporary society. The entire study demonstrates that “barbarianization” and “Sinicization” imperceptibly influence the cultural psychology of Hebei Han people and Yunnan Naxi people, and that the cultural psychology of various ethnic groups in China is a product of cultural fusion. The psychology of various ethnic groups within the Chinese nation exhibits the characteristic of “I in you, you in me,” providing solid psychological evidence for the theory of the pluralistic yet integrated pattern of the Chinese nation and Chen Yinke’s “theory of cultural identification.”

## Full Text

### Psychological Evidence of Cultural Integration in the Chinese Nation: Scenario-Based Experimental Results from Han and Naxi Ethnic Groups

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#### Abstract

The custom of “Esteeming the Robust While Neglecting the Elderly” characterized ancient northern nomadic peoples, whereas “Respecting the Elderly and Cherishing the Young” has been a long-standing tradition among the Huaxia people. The concepts of “Hu-hua” (Han ethnic groups adopting nomadic customs) and “Sinicization” (ethnic minorities adopting Han customs) represent tangible manifestations of cultural integration throughout Chinese history, epitomizing the notion that “you are in me and I am in you” during the formation of the Chinese nation. In modern China, distinguished historians such as Fu Sinian, Gu Jiegang, and Chen Yinke have conducted pioneering research, accumulating substantial archaeological, historical, linguistic, and cultural evidence. However, what psychological evidence exists for cultural integration within the Chinese nation?

Through two experiments, this study examined the willingness of middle-aged and elderly individuals from Hebei Han and Yunnan Naxi ethnic groups to provide security and helping behaviors toward people of different ages across various contexts. The results revealed that middle-aged and elderly Naxi individuals demonstrated stronger intentions to secure and help elderly people, whereas their Han counterparts showed stronger intentions to secure and help middle-aged individuals. This indicates that during long-term cultural integration, the Naxi people have internalized the Confucian value of respecting the elderly, while Hebei Han people have also adopted the nomadic characteristic of

“esteeming the robust.” Remarkably, middle-aged and elderly individuals from both ethnic groups consistently prioritized children across all contexts, reflecting both the deeply rooted Chinese ethics of valuing descendants and the influence of modern “low fertility” demographics.

High school students from both ethnic groups predominantly chose to secure or help children or fathers in most situations, suggesting that personality orientation differences between ethnic groups are gradually diminishing in contemporary society. Overall, this research demonstrates that “Hu-hua” and “Sinicization” have subtly shaped the cultural psychology of Hebei Han and Yunnan Naxi people, and that the cultural psychology of Chinese ethnic groups is a product of cultural integration. The psychological characteristics of ethnic groups within the Chinese nation embody the feature of “you are in me and I am in you,” providing solid psychological evidence for the theoretical framework of the Chinese nation’s pluralistic unity and Chen Yinque’s “Theory of Transformation and Recognition.”

**Keywords:** Cultural integration, Naxi ethnic group, Han ethnic group, security behaviors, helping behaviors, intention

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## 1.1 Cultural Integration

Cultural integration, also known as ethnic cultural fusion, refers to the process in which ethnic cultures, based on their traditional foundations, selectively absorb and assimilate foreign cultural elements according to their needs, thereby promoting their own development (Jones, 2019; Chamba & Pema, 2025). This process comprises three stages: (1) Contact, where two cultures interact through communication; (2) Collision and selection, as each culture tenaciously expresses itself while rejecting others, leading to collisions that result in the selection of superior elements and elimination of inferior ones; and (3) Integration, where selected cultural elements are adjusted and merged to form a new cultural system (Chen & Huo, 2015). Cultural integration is not merely a transformation of cultural forms but also a means of cultural adaptation and innovation. Through this process, original cultures change and produce new cultural forms, which is significant for understanding cultural diversity and the formation of higher-level ethnic communities. Throughout Chinese history, cultural integration and conflict have coexisted, but integration has remained the mainstream. Chinese history is essentially a chronicle of various ethnic groups converging into a pluralistic yet unified Chinese nation. Chinese culture represents the culmination of all ethnic cultures in China, formed by absorbing various ethnic cultures with Huaxia culture at its core.

In modern China, numerous scholars have laid a solid foundation for contemporary research on cultural integration within the Chinese nation. Fu Sinian (1931), in *An Outline History of Northeast China*, used historical, linguistic, mythological, and archaeological evidence to demonstrate that northern China

and Northeast China shared common ancestry and culture in prehistoric times, establishing that Northeast China is an inseparable component of the Chinese nation. Gu Jiegang (1939), in *The Chinese Nation Is One*, enumerated the influences of various ethnic minority cultures on Chinese culture from components such as music, utensils, clothing, and customs, arguing for the integrity and integrative nature of Chinese culture. He stated, “The culture currently used by the Han people is shared with non-Han peoples; this should not be called Han culture but rather ‘Chinese national culture.’ ” Chen Yinque proposed incisive insights regarding the relationship between race and culture, suggesting that the distinction between Hu and Han was actually a confrontation between two cultures rather than differences in race or bloodline. He also introduced the concept of cultural integration through “education without discrimination” : “Throughout the history of the Northern Dynasties, all issues concerning Hu and Han were actually problems of Hu-hua and Sinicization, not of Hu or Han ancestry. The so-called Hu and Han people at that time were generally distinguished by cultural transformation rather than ethnic origin, meaning cultural relationships were more important than racial ones—this is what ‘education without discrimination’ means.” He further stated, “Those who have been sinicized are regarded as Han, while those who have adopted Hu customs are regarded as Hu” (Chen, 2011). Chen Yinque’s ethnic theory has been summarized by later scholars as the “Theory of Transformation and Recognition” (Zhang & Yu, 2023).

## 1.2 Hu-hua in Heshuo and Sinicization in Lingnan

Chinese history is a history of the interweaving of “Hu-hua” and “Sinicization,” with continuous mutual transformation among various ethnic cultures. “Hu-hua” refers to the objective acceptance or subjective recognition and integration of nomadic thinking patterns and lifestyles by the Han ethnic group, which was particularly prominent in China’s Heshuo region (Zhang, 2013). “Sinicization” refers to the objective acceptance or subjective identification with Han lifestyles and ideologies by ethnic minorities (Lin, 2000). Chen Yinque noted in *Biography of Liu Rushi*: “Yinque once argued that the distinction between Hu and Han in the Northern Dynasties lay in culture rather than race. When discussing ethnic minorities in Jiangdong, he highlighted the sage’s principle of ‘education without discrimination’ …When discussing the Hebei military governors of the Tang Dynasty, he recognized them as essentially a Hu-hua group, which is why the Chang’ an government could never reclaim them.”

Large-scale migration waves provided crucial conditions for the spread of nomadic culture among northern Han peoples and Confucian culture among southern ethnic minorities (Zhang & Qiao, 2018). During the late Sui and early Tang dynasties, Heshuo culture began to show tendencies toward “Hu-hua.” The Li Tang royal family, adhering to the ethnic view of “Huaxia and barbarians as one family” and considering their own mixed Han-Hu ancestry, spontaneously sustained “zero-distance ethnic integration” for centuries. Chen Yinque (2020)

stated: “The reason the Li Tang clan rose to prominence was that it infused the decadent body of Central Plains culture with the fierce blood of the northern steppes, eliminating old stains and restarting new opportunities, thereby expanding and creating an unprecedented situation.” Due to the Tang Dynasty’s open and inclusive policies toward ethnic minorities, large numbers of Turkic, Xianbei, Khitan, and other minority immigrants poured into the Heshuo region. “Thus, by the late Kaiyuan period in Hebei, over approximately twenty years, the number of Hu ethnic groups residing there increased daily, becoming the dominant population. The homeland of Shandong gentry clans for centuries was transformed into a barbarian region” (Chen, 2011). After the An Lushan Rebellion, the Heshuo region fell under the control of military governors, creating a phenomenon where “though their ethnicity was Han, they had long resided in Heshuo, gradually adopting Hu customs until they were no different from Hu people.” Consequently, the *New Book of Tang* contains the phrase “The world regards Heshuo as barbarian.” Subsequently, ethnic minorities repeatedly ruled the Central Plains, and during the Jin Dynasty, the scenario emerged where “(Han) people have long been accustomed to Hu customs, with their attitudes and preferences completely transformed” (Ge et al., 1993). The impact of Hu culture triggered changes in the lifestyle and customs of northern Han people, such as the prevalence of “Mongol hats and felt garments” during the Yuan Dynasty and the left-lapel clothing of Han women during the Ming Dynasty (Chen & Lu, 2005).

Since the Qin Dynasty unified the Lingnan region, this area has embarked on a continuous process of Sinicization. Ethnic migration and the settlement of military personnel were the main channels of Sinicization (Cheng, 2002). Due to political turmoil and warfare, three large-scale southward migrations of Central Plains Han people occurred during the Wei-Jin Southern and Northern Dynasties period, after the An Lushan Rebellion in the Tang Dynasty, and during the Song Dynasty—known as the “Southern Crossing of the Elite.” To consolidate control over Yunnan, the Ming rulers implemented a border defense strategy combining military garrisons with agricultural colonization in Yunnan in the 15th year of the Hongwu reign. Eight hundred thousand Han soldiers and officers settled in Yunnan with their families for garrison and agricultural purposes (Lu, 2001). Additionally, due to trade, demotion, refuge, and official appointments, Han immigrants who migrated to Yunnan lived “interspersed and mixed” with local indigenous peoples, accelerating the identification process with Huaxia culture in the Lingnan region. Reshaping ancestral memory and ethnic identity, such as “falsely registering as Jiangnan or Nanjing natives” and adopting Han surnames, became common among various Yunnan ethnic groups. This “root-seeking identification” represents a typical model of Sinicization for ethnic minorities in the Lingnan region.

### 1.3 Hu-hua and Sinicization Triggering Age Perspective Transformations in Agricultural and Nomadic Peoples

Different cultures hold different perspectives on age, and cultural integration is reflected in the age perspectives of various Chinese ethnic groups. Age perspective refers to the overall view that individuals or groups hold toward people of different ages. In traditional Chinese culture, children and adolescents are seen as the morning sun at eight or nine o' clock—the hope of families, the future of the nation, and the promise of the motherland. Middle-aged individuals are the mainstay of society, bearing heavy responsibilities for both family and society. The elderly are embodiments of wisdom and moral exemplars. Proverbs and idioms such as “Ginger is spicier when old,” “An old horse knows the way,” and “Disregard the advice of the elderly and suffer the consequences” all reflect the high status enjoyed by the elderly in family and society. However, in Western societies that venerate youth, the elderly are often labeled with negative stereotypes such as illness, aging, and death, with age becoming a private matter one is unwilling to disclose. Thus, views on people of different ages are rooted in cultural traditions.

China's 56 ethnic groups share common ancestry and thus possess the commonality of the Chinese nation, while also demonstrating unique personality orientations due to their distinct regional cultures (Lan et al., 2005). Fromm (2013) argued that character formation is a process of assimilation and socialization. Character reflects not only individuals' internal needs but also their interactions with the external world. He categorized human character orientations into non-productive, productive, and mixed types. Rubin (2019) proposed a character tendency theory, dividing character into supporters, skeptics, defenders, and rebels. Individuals with different character orientations respond differently to expectations and challenges. Francis L. K. Hsu (2002) proposed in the preface to *Clan, Caste, and Club* that Americans hold an individual-centered worldview, Chinese hold a situation-centered worldview, and Hindus hold a supernatural-centered worldview. When translated by Huang Guangguo, these three worldviews were termed three character orientations. Berry's (1967) ecological culture and behavior theory can reasonably explain the different character orientations presented by various Chinese ethnic groups: specific ecological environments lead to specific cultural forms, and certain ecological and cultural forms jointly shape individuals, generating corresponding behavioral patterns. These behavioral patterns enable individuals to better adapt to their ecological and cultural environments and even influence and change them.

Production methods are crucial factors determining the status of the elderly in society and family (Wei, 2006). Historically, due to the grassland or desert environments of northern China's nomadic peoples, which lacked fertile soil suitable for agriculture, they adopted a production method dominated by nomadic herding supplemented by hunting. The nomadic hunting economy was extremely fragile, relying solely on nature's bounty, with low economic energy conversion efficiency. Consequently, elderly individuals with declining physical

strength and children lacking independent survival abilities were seen as mere consumers of living materials and burdens to the tribe, while young and strong youths were the main force ensuring the reproduction of living materials. For tribal survival and development, nomadic peoples formed the custom of “neglecting the old and weak while esteeming the strong and healthy” (Sun & Luo, 2019). The *Book of Han* records: “The strong eat the fat and delicious, while the old eat the leftovers; the strong and healthy are esteemed while the old and weak are despised.” The *Book of Sui* records: “The Turks...despise the old and esteem the strong.” Unlike nomadic peoples, agricultural peoples did not primarily rely on physical strength to extract material resources from nature for survival. In ancient times, members of different ages in agricultural societies all participated in production, with young and middle-aged people acquiring and inheriting rich agricultural production experience through the oral teachings of the elderly. The elderly held high prestige and status in agricultural societies. “Respecting the elderly” thus became a fundamental moral ethic. Mencius envisioned an ideal society as one of universal filial piety: “Honor your own elders and extend this honor to others’ elders; care for your own children and extend this care to others’ children.” In short, the character orientation of Han people regarding age perspectives is “respecting the elderly and cherishing the young.” In summary, the ecological environment determines each ethnic group’s production methods, which in turn shape their distinct character orientations (Zhang et al., 2022; Zhou, 2013).

Due to extensive historical interactions between northern Han peoples and nomadic peoples, including prolonged periods under the rule of nomadic dynasties, the custom of “esteeming the strong while neglecting the elderly” gradually permeated Han culture. For example, in rural areas of Shandong, Hebei, and Northeast China, during festivals or celebrations when many guests are present, the male head of household (or primary breadwinner) typically sits at the table to accompany guests, while elderly people, women, and children rarely sit at the table to eat (Chou, 2024). In times of material scarcity, male laborers were considered the “pillar of the family,” referred to as “loin meat” (pork loin), “main pillar,” or “backbone,” and were usually given priority access to the best or most abundant food, while elderly people, women, and children often became neglected groups within the family (Bei & Hong, 2007; Yan & Zou, 2018). In contrast, the Naxi people residing in the Lingnan region are believed to be descendants of the ancient Di-Qiang nomadic peoples who herded along the Hehuang area during the pre-Qin period. After migrating to Yunnan, their production methods shifted from nomadic herding to agriculture. Through long-term contact and interaction with southward-migrating Central Plains Han peoples, social customs permeated by Confucian culture (such as respecting the elderly and cherishing the young) also penetrated the daily lives of local people. Naxi village regulations include clauses stipulating punishment for disrespecting elders (Xiao & Zhang, 2012). The Naxi people also greatly cherish the young. Zhang and He (2004) found that in the semantic space of Naxi university students’ kinship terms, there exists a “caregiver/care-receiver” dimension,

where offspring, grandchildren, and grandparents cluster together as “kin to be supported and cared for.”

Different ethnic cultures shape different ethnic psychologies. Cultural transformation plays a crucial role in the deep integration of ethnic psychology (Xu & Zheng, 2012), leading to psychological fusion—where one ethnic group psychologically acquires characteristics of another. “Hu-hua” endowed northern Han peoples with psychological characteristics of nomadic peoples, while “Sinicization” endowed southern Naxi peoples with psychological characteristics of Han peoples. While substantial evidence for cultural integration within the Chinese nation exists in history, ethnology, religious studies, and folklore, psychological evidence remains scarce. An intriguing question arises: Do contemporary Hebei Han and Yunnan Naxi peoples differ in their age perspectives? If so, this would provide psychological evidence for cultural integration within the Chinese nation. According to Chen Yinque’s ethnic view that prioritizes culture over race, although the Naxi people are descendants of nomadic peoples, would their degree of respect for the elderly, due to changed production methods and long-term influence from Han culture, be higher than that of Hebei Han people historically influenced by nomadic customs?

Although respecting the elderly and cherishing the young are traditional Chinese virtues, Ren et al. (2012) found that university students do not perceive elderly people as having higher professional competence than younger individuals, nor do they give more positive evaluations to elderly people in professional, family, or virtue contexts. Slotterback and Saarnio (1996) discovered that although people hold more negative attitudes toward the elderly than toward younger and middle-aged individuals in terms of cognition, communication ability, and functional capacity, this negative evaluation tendency varies depending on contextual categories and research methods. This indicates that individuals’ attitudes toward different age groups exhibit context effects. Given the particularity of the research subjects, this study employs scenario-based experimental methods to explore the security and helping behavioral intentions of different ethnic participants. Security behaviors typically refer to a series of measures and actions taken to ensure the safety, stability, or achievement of certain expected states for people, events, or objects, with the primary purpose of maintaining overall safety, stability, and normal order. The focus is on the normal operation of groups, with organizations or institutions as the main actors, characterized by institutional, normative, and procedural features. Huang and Xue (2012), from an ethical perspective, argued that in disaster relief, the principle of prioritizing vulnerable groups must be guaranteed, with elderly people, children, and injured victims receiving priority in escape and rescue operations and material distribution. Related research often describes alternative options in security tasks using positive frames (described with positive language, such as “rescued”) and negative frames (described with negative language, such as “death”) (Wang et al., 2011), but rarely explores which groups would be prioritized for assistance or rescue during disasters or resource scarcity.

Helping behavior is a type of prosocial behavior—voluntary actions by individuals that seek no external reward and may even entail certain costs (Eisenberg & Mussen, 1989). It emphasizes individual-level care, helping specific individuals solve difficulties or meet their needs, with individuals as the main actors. The primary difference between security behaviors and helping behaviors lies in their perspective. Security behaviors adopt an organizational perspective, or what might be called a God’ s-eye view (third-person narration). Third-person narrators, like omniscient gods, can describe anything without restriction in an unrealistic manner. Prosocial behaviors typically adopt a personal perspective. According to Batson’ s empathy-altruism hypothesis for prosocial behavior, whether prosocial behavior occurs depends on whether individuals develop empathy for those in need. If empathy is generated, placing oneself in another’ s position and experiencing events or emotions from that person’ s perspective, altruism may occur (Kou & Xu, 2005). From this theoretical perspective, security behaviors, due to their organizational viewpoint, make empathy difficult to generate, whereas helping behaviors, which adopt a personal perspective, facilitate empathy. Existing research indicates that helping behavioral intentions are constrained by context (Fischer et al., 2011), the type of person being helped (Meng et al., 2022), and the age of the participant (Cao & Cheng, 2024). However, few studies have comprehensively examined these three factors together.

In light of these considerations, this study conducted two experiments with middle-aged/elderly individuals and high school students from Han and Naxi ethnic groups. Experiment 1 explored which of three individuals—children, fathers, or grandfathers—participants would prioritize for receiving resources or rescue under three scenarios of material scarcity or life threat. The hypothesis was that Yunnan Naxi people would prioritize grandfathers and children, while Hebei Han people would prioritize fathers. Experiment 2 employed monetary and time-based helping tasks, requiring participants to provide financial or temporal assistance to elderly, middle-aged, and children within their own ethnic group. The hypothesis was that Yunnan Naxi people would allocate more money (or time) to elderly people and children, while Hebei Han people would allocate more money (or time) to middle-aged individuals.

### 2.1.1 Participants

G\*Power 3.1 software was used to estimate the required sample size. Following the criteria set by Meng et al. (2022), with  $f = 0.5$ ,  $\alpha = 0.05$ , two-tailed test, and a participant ratio of  $N_2/N_1 = 1$ , a minimum of 105 participants was required to achieve a statistical power of 0.95. Yulong County in Yunnan Province is an autonomous county for the Naxi ethnic group. According to the seventh national census data from 2020, the Naxi ethnic group accounts for 49.15% of the county’ s total population. Shijiazhuang City in Hebei Province belongs to Chengde Prefecture, one of the three ancient Heshuo prefectures. Using convenience sampling, 150 middle-aged and elderly Han individuals (74 males) were recruited from communities in Shijiazhuang City, Hebei Province, with a mean age of

61.16  $\pm$  8.27 years; and 156 middle-aged and elderly Naxi individuals (70 males) were recruited from Yulong County, with a mean age of 61.39  $\pm$  9.34 years. The educational levels of participants from both ethnic groups were balanced ( $p > 0.05$ ).

### 2.1.2 Design

A single-factor experimental design was employed, with the independent variable being the ethnic type of middle-aged and elderly participants (Hebei Han vs. Yunnan Naxi). The dependent variable was the proportion of participants who prioritized each security target.

### 2.1.3 Materials

Three self-compiled story materials were created for food security, clothing security, and life security scenarios. Fifty-one undergraduate psychology majors from a university were recruited to evaluate whether these materials could effectively measure attitudes toward security targets using a 7-point rating scale (1 = completely ineffective, 7 = completely effective). The scores were: food security scenario ( $M = 5.08$ ,  $SD = 1.25$ ), clothing security scenario ( $M = 5.16$ ,  $SD = 1.12$ ), and life security scenario ( $M = 5.31$ ,  $SD = 1.24$ ). The food security scenario correlated significantly with the clothing security scenario,  $r = 0.52$ ,  $p < 0.001$ ; the food security scenario also correlated significantly with the life security scenario,  $r = 0.28$ ,  $p = 0.046$ ; and the clothing security scenario correlated significantly with the life security scenario,  $r = 0.34$ ,  $p = 0.015$ . These results indicate that the experimental materials demonstrated good homogeneity and reliability for measuring attitudes toward different security targets. During the formal experiment, the ethnic identities of characters in the scenarios matched those of the participants. To increase psychological involvement, participants were told that these events actually occurred in the past. The materials were as follows:

- (1) **Food Security Scenario:** Imagine you are experiencing the 1941 drought in **Province, which caused complete crop failure throughout the province. After the drought, an even more severe locust plague struck, leading to a severe famine across Province** in 1942. Almost no grain could be found in any household, and people could only survive by digging wild vegetables and eating grass roots from the mountains. By that time, wild grasses and vegetables on the mountains had almost been exhausted. One day, a kind neighbor sent over two potatoes, but three people in your family were starving to death, including a grandfather who has lost his ability to work, a father responsible for farm work, and a 4-year-old child. Who would you prioritize to receive these two potatoes? ( ) Note: Only one option can be filled in the parentheses.
- (2) **Clothing Security Scenario:** Imagine you are experiencing a magni-

tude 7 earthquake that struck \*\*Province in 1913. After the earthquake, the weather in the disaster area was extremely cold, and people' s lives were very difficult. Almost all victims lacked cotton-padded jackets and quilts to keep warm, and could only cover themselves with straw at night. Worse still, the weather forecast indicated a severe cold wave that night. Without cotton-padded jackets, anyone could freeze to death. A domestic philanthropist promptly donated a batch of cotton-padded jackets to the disaster area. However, due to limited quantities, each household could only receive one jacket. If there are three people in your family, including a grandfather who has lost his ability to work, a father responsible for farm work, and a 4-year-old child, who would you prioritize to receive this jacket? ( ) Note: Only one option can be filled in the parentheses.

- (3) **Life Security Scenario:** On December 21, 1913, a magnitude 7 earthquake struck \*\*Province. As the earth shook and mountains trembled, towns were leveled to the ground. Tens of thousands of lives were buried under the rubble, some with heads caught between stones, others with legs pinned under fallen beams. The air was filled with the smell of blood, and the sounds of shouting, groaning, and crying filled the air. Imagine you are a member of an emergency rescue team. You discover that three members of one household are pinned under the rubble, barely alive, including a grandfather who has lost his ability to work, a father responsible for farm work, and a 4-year-old child. With limited rescue time, who would you prioritize to rescue? ( ) Note: Only one option can be filled in the parentheses.

#### 2.1.4 Results and Analysis

Six participants' data were excluded for not meeting requirements (e.g., listing two security targets). This included five middle-aged/elderly Han participants and one middle-aged/elderly Naxi participant. SPSS 29.0 was used for data analysis. The results are shown in Figure 1 [Figure 1: see original paper].

##### (1) Food Security Scenario

Among middle-aged/elderly Han participants, the largest proportion prioritized children, followed by grandfathers, and finally fathers. Among middle-aged/elderly Naxi participants, the largest proportion prioritized grandfathers, followed by children, with fathers receiving the lowest proportion. Proportion difference tests indicated that the proportion of middle-aged/elderly Naxi participants who prioritized grandfathers was significantly higher than that of their Han counterparts,  $Z = 4.10$ ,  $p < 0.001$ , 95% CI = [0.13, 0.34]. The proportion of middle-aged/elderly Han participants who prioritized fathers was significantly higher than that of Naxi participants,  $Z = 2.82$ ,  $p = 0.005$ , 95% CI = [0.03, 0.17]. The proportion of middle-aged/elderly Han participants who prioritized children was significantly higher than that of Naxi participants,  $Z = 2.29$ ,  $p = 0.022$ , 95% CI = [0.02, 0.25].

**Figure 1** Proportions (%) of middle-aged/elderly Han and Naxi participants prioritizing each of the three security targets in security scenarios. Note:  $p < 0.05$ ;  $p < 0.01$ ;  $p < 0.001$ , the same below.

### (2) Clothing Security Scenario

The order of prioritized security targets for both ethnic groups was consistent with the food security scenario (Han: children > grandfather > father; Naxi: grandfather > children > father). Proportion difference tests showed that the proportion of middle-aged/elderly Naxi participants who prioritized grandfathers was significantly higher than that of Han participants,  $Z = 5.81$ ,  $p < 0.001$ , 95% CI = [0.23, 0.44]. The proportion of middle-aged/elderly Han participants who prioritized fathers was significantly higher than that of Naxi participants,  $Z = 4.15$ ,  $p < 0.001$ , 95% CI = [0.07, 0.20]. The proportion of middle-aged/elderly Han participants who prioritized children was significantly higher than that of Naxi participants,  $Z = 3.54$ ,  $p < 0.001$ , 95% CI = [0.09, 0.31].

### (3) Life Security Scenario

The order of prioritized security targets differed from the previous two scenarios (Han: children > father > grandfather; Naxi: children > grandfather > father). Proportion difference tests revealed that the proportion of middle-aged/elderly Naxi participants who prioritized grandfathers was significantly higher than that of Han participants,  $Z = 2.70$ ,  $p = 0.007$ , 95% CI = [0.03, 0.19]. The proportion of middle-aged/elderly Han participants who prioritized fathers was significantly higher than that of Naxi participants,  $Z = 4.42$ ,  $p < 0.001$ , 95% CI = [0.08, 0.21]. There was no significant difference between the two groups in the proportion prioritizing children,  $Z = 0.73$ ,  $p = 0.47$ , 95% CI = [0.06, 0.13].

## 2.1.5 Summary

Across all three security scenarios, middle-aged/elderly Naxi participants showed a greater proportion prioritizing grandfathers compared to their Han counterparts, indicating relatively stronger respect for the elderly among Naxi middle-aged and elderly individuals. Conversely, middle-aged/elderly Han participants showed a greater proportion prioritizing fathers compared to Naxi participants, indicating stronger esteem for the robust. Second, in all three security scenarios, both Han and Naxi middle-aged/elderly participants showed large proportions prioritizing children, reflecting the influence of modern low fertility demographics and the deeply rooted Chinese ethics of valuing descendants. In food and clothing security scenarios, middle-aged/elderly Naxi participants showed the largest proportion prioritizing grandfathers, demonstrating strong respect for the elderly, while middle-aged/elderly Han participants showed the smallest proportion prioritizing fathers. Post-experiment discussions with middle-aged/elderly Han participants revealed that they believed physically strong fathers had much lower probabilities of “starving” or “freezing to death” compared to physically weak children and grandfathers. Thus, most Han middle-aged and elderly participants based their security target selection on objective situational factors, which did not genuinely reflect their character

orientation in food and clothing security scenarios. Character orientation apparently requires specific stimuli to manifest (Zhang, 2019). In the life security scenario, which they perceived as “more dangerous,” the proportion prioritizing fathers was significantly higher than that prioritizing grandfathers. This suggests that, excluding constraints from objective situational factors, at the subjective consciousness level, middle-aged/elderly Han participants placed fathers in a more important position than did their Naxi counterparts. This not only indicates that Han middle-aged and elderly participants’ attitudes toward people of different ages are influenced by situational factors but, more importantly, reflects that their age perspective has acquired nomadic characteristics—emphasizing the core position of labor force in the family. Does this ethnic character orientation have intergenerational transmission effects? Therefore, Experiment 1b examined high school students from both Han and Naxi ethnic groups in the same security scenarios to explore whether differences exist in their prioritized security targets.

### 2.2.1 Participants

The same criteria and required sample size as Experiment 1a were applied. Two hundred five Naxi high school students (105 males) were recruited from Lijiang No. 1 Middle School, with a mean age of  $16.36 \pm 0.53$  years. Three hundred ninety Han high school students (200 males) were recruited from the High School Affiliated to Hebei Normal University, with a mean age of  $15.97 \pm 0.60$  years.

### 2.2.2 Design and Materials

Similar to Experiment 1a.

### 2.2.3 Results and Analysis

Eleven participants’ data were excluded for not meeting requirements (two Han high school students and five Naxi high school students). The results are shown in Figure 2 [Figure 2: see original paper].

**Figure 2** Proportions (%) of Han and Naxi high school students prioritizing each of the three security targets in security scenarios.

#### (1) Food Security Scenario

Both ethnic groups showed the same order of prioritized security targets: father > children > grandfather, in descending order. Proportion difference tests indicated no significant difference between Han and Naxi high school students in the proportion prioritizing grandfathers,  $Z = 1.42$ ,  $p = 0.16$ , 95% CI = [-0.01, 0.10]. The proportion of Han high school students prioritizing fathers was significantly higher than that of Naxi students,  $Z = 4.42$ ,  $p < 0.001$ , 95% CI = [0.10, 0.27]. The proportion of Han high school students prioritizing children was significantly lower than that of Naxi students,  $Z = 2.29$ ,  $p < 0.001$ , 95% CI = [0.15, 0.31].

### (2) Clothing Security Scenario

Both Han and Naxi high school students showed the same order of prioritized security targets: children > father > grandfather, in descending order. Proportion difference tests revealed no significant difference between the two groups in the proportion prioritizing grandfathers,  $Z = 1.83$ ,  $p = 0.07$ , 95% CI = [-0.01, 0.14]. The proportion of Han high school students prioritizing fathers was significantly higher than that of Naxi students,  $Z = 2.86$ ,  $p = 0.004$ , 95% CI = [0.04, 0.19]. The proportion of Han high school students prioritizing children was significantly lower than that of Naxi students,  $Z = 4.24$ ,  $p < 0.001$ , 95% CI = [0.10, 0.27].

### (3) Life Security Scenario

Both ethnic groups showed the same order of prioritized security targets as in the clothing security scenario (children > father > grandfather). Proportion difference tests indicated no significant differences between Han and Naxi high school students in the proportions prioritizing any of the three security targets (grandfather:  $Z = 0.004$ ,  $p = 0.1$ , 95% CI = [-0.05, 0.05]; father:  $Z = 1.26$ ,  $p = 0.21$ , 95% CI = [-0.02, 0.11]; children:  $Z = 1.12$ ,  $p = 0.26$ , 95% CI = [-0.03, 0.12]).

Experiment 1b found that high school students from both ethnic groups showed the lowest proportion prioritizing grandfathers across all three security scenarios. In food and clothing security scenarios, the proportions prioritizing fathers and children differed significantly between the two groups, but in the life security scenario, no significant differences existed in the proportions prioritizing fathers and children. This again confirms that age perspectives are context-dependent.

The results of Experiments 1a and 1b differed significantly. What accounts for this discrepancy? Batson (2011) proposed that four motivational types drive prosocial behavior: egoism, altruism, collectivism, and principlism. Egoism alleviates one's own negative emotions through helping behavior to enhance personal well-being. Altruism is based on sympathy or empathy for others' suffering, aiming to enhance others' well-being. Collectivism strengthens one's social identity as a group member, pursuing group interest maximization. Principlism upholds certain moral principles, such as fairness or justice. These motivations are not mutually exclusive; individuals may harbor multiple motivations simultaneously. In Experiment 1a, Naxi middle-aged and elderly participants prioritized grandfathers or children across all three security scenarios, primarily reflecting altruistic and collectivistic motivations. Hebei middle-aged and elderly Han participants prioritized fathers more often in the life security scenario, mainly reflecting collectivistic motivations plus some egoistic motivation. In Experiment 1b, high school students from both ethnic groups showed the lowest proportion prioritizing grandfathers across all three security scenarios, with motivations tending toward pure altruism and relatively weakened group identity or egoistic motivations. This also demonstrates psychological integration between ethnic groups in the modernization process. Post-experiment discussions revealed that these students considered children as the hope and future of

families and fathers as the backbone. Prioritizing children (or fathers) meant maximizing the preservation and continuation of a family. This does not mean these high school students lack ethics of respecting the elderly and filial piety; rather, when caught in dilemmas, they followed the principle of group interest maximization after weighing pros and cons.

Explicit forced-choice tests are often easily influenced by the spirit of the times, whereas implicit resource allocation tests can more genuinely reflect people's attitudes and enhance ecological validity. Therefore, Experiment 2 examined the helping intentions of middle-aged/elderly individuals and high school students from both Han and Naxi ethnic groups through time allocation tasks and monetary donation tasks.

### 3.1 Participants

G\*Power 3.1 software was used to estimate the required sample size. Following the criteria set by Wang et al. (2024), with  $f = 0.25$  and  $\alpha = 0.05$ , a minimum of 44 participants was required to achieve a statistical power of 0.8. One hundred sixty Naxi middle-aged and elderly participants (85 males) were recruited, with a mean age of  $61.23 \pm 9.41$  years. One hundred fifty-three Han middle-aged and elderly participants (74 males) were recruited, with a mean age of  $61.07 \pm 8.34$  years. There was no significant difference in educational levels between middle-aged and elderly participants from the two ethnic groups ( $p > 0.05$ ). Two hundred seventy Naxi high school students (138 males) were recruited, with a mean age of  $16.32 \pm 0.51$  years. Three hundred ninety-eight Han high school students (198 males) were recruited, with a mean age of  $15.97 \pm 0.60$  years. These participants were homogeneous with those in Experiment 1 and did not participate in Experiment 1.

### 3.2 Design

A 2 (ethnicity: Han/Naxi)  $\times$  2 (group type: middle-aged and elderly/high school students)  $\times$  3 (help recipient: elderly/middle-aged/children) mixed design was employed. Ethnicity and group type were between-subjects variables; help recipient was a within-subjects variable. The dependent variables were the amounts of monetary donation and time allocation reported by participants.

### 3.3 Materials

Nelson and Norton's (2005) monetary and time decision tasks were adapted and localized. Three helping scenarios were created: (1) willingness to provide time companionship, (2) willingness to provide monetary assistance for medical treatment, and (3) willingness to provide time for intellectual support. The materials were as follows:

- (1) **Time Companionship Scenario:** There are three people who always feel depressed, irritable, and often conflict with others, showing no interest

in anything. After hospital examination, the doctor informed them that they all suffer from depression and recommended that they need companionship and someone to listen to their inner thoughts. If you have 100 minutes of free time, how would you allocate these 100 minutes among these three people? (Please fill in integer values between 0 and 100 minutes; fill in 0 if unwilling.)

- (2) **Monetary Assistance Scenario:** In a hospital ward, three patients have all been diagnosed with lung cancer and have undergone chemotherapy several times. They now frequently have recurrent fevers, and the pain torment makes them increasingly weak, unable to eat or sleep well. They will need to continue chemotherapy treatment, but the savings of all three families have been exhausted. Now, various sectors of society are organizing donations to help them continue treatment. If you currently have 1,000 yuan, how would you allocate this 1,000 yuan among these three people? (Please fill in integer values between 0 and 1,000 yuan; fill in 0 if unwilling.)
- (3) **Time-Based Intellectual Support Scenario:** In your residential community, there are three people: a 10-year-old student who recently transferred schools and needs tutoring because they cannot keep up with much of the coursework; a 45-year-old middle-aged person who comes from a very remote and backward area and does not know how to use a mobile phone, needing someone to teach them how to use it to contact relatives; and an 80-year-old elderly person who recently keeps forgetting where they put things. The doctor diagnosed early-stage Alzheimer's disease and recommended that accompanying others to participate in physical exercise can effectively delay the onset of the disease. If you have 100 minutes of free time, how would you allocate these 100 minutes among these three people? (Please fill in integer values between 0 and 100 minutes; fill in 0 if unwilling.)

The three help recipients in these decision scenarios were identified as: a 10-year-old child, a 45-year-old middle-aged person, and an 80-year-old elderly person. The ethnic attributes of the help recipients matched those of the participants.

### 3.4 Results and Analysis

Seventeen participants' data were excluded for not meeting requirements (five middle-aged/elderly Naxi participants, ten Han high school students, and two Naxi high school students).

#### (1) Time Companionship Scenario

The results are shown in Figure 3 [Figure 3: see original paper].

**Figure 3** Time allocation (minutes) for companionship to three help recipients.

ANOVA revealed a significant main effect of help recipient,  $F(2, 1820) = 34.97$ ,  $p < 0.001$ ,  $p^2 = 0.04$ . The interaction among ethnicity, group type, and help recipient was significant,  $F(2, 1820) = 3.22$ ,  $p = 0.04$ ,  $p^2 = 0.004$ . Simple effects analysis indicated no significant difference between the two ethnic groups in time allocated to children by middle-aged/elderly participants,  $p > 0.1$ . Middle-aged/elderly Naxi participants allocated significantly less time to middle-aged recipients than did Han participants,  $p = 0.009$ , 95% CI = [0.96, 6.76]. Middle-aged/elderly Naxi participants allocated significantly more time to elderly recipients than did Han participants,  $p = 0.011$ , 95% CI = [0.92, 6.97]. No significant differences existed between the two ethnic groups in time allocated to the three help recipients by high school students,  $ps > 0.1$ .

Further analysis revealed that middle-aged/elderly Naxi participants allocated time in descending order to children, elderly, and middle-aged recipients, with all pairwise differences significant (children vs. middle-aged,  $p < 0.001$ , 95% CI = [8.57, 16.19]; children vs. elderly,  $p = 0.002$ , 95% CI = [2.42, 10.35]; middle-aged vs. elderly,  $p = 0.001$ , 95% CI = [2.41, 9.58]). Naxi high school students allocated the least time to elderly recipients; differences between middle-aged and children, and between middle-aged and elderly, were not significant,  $ps > 0.1$ ; the difference between children and elderly was significant,  $p = 0.029$ , 95% CI = [0.34, 6.23]. Middle-aged/elderly Han participants allocated significantly more time to children than to the other two groups (vs. middle-aged,  $p < 0.001$ , 95% CI = [4.92, 12.29]; vs. elderly,  $p < 0.001$ , 95% CI = [6.59, 14.25]), with no significant difference between middle-aged and elderly recipients,  $p > 0.1$ , allocating the most time to children. Han high school students showed a similar pattern to Naxi high school students (middle-aged vs. children, middle-aged vs. elderly,  $ps > 0.1$ ; children vs. elderly,  $p = 0.023$ , 95% CI = [0.40, 5.40]).

## (2) Monetary Assistance Scenario

The results are shown in Figure 4 [Figure 4: see original paper].

**Figure 4** Monetary donations (yuan) to three help recipients.

ANOVA indicated a significant main effect of help recipient,  $F(2, 1820) = 188.19$ ,  $p < 0.001$ ,  $p^2 = 0.17$ . The interaction among ethnicity, group type, and help recipient was significant,  $F(2, 1820) = 8.60$ ,  $p < 0.001$ ,  $p^2 = 0.009$ . Simple effects analysis showed similar trends to the time companionship scenario. Both ethnic groups of middle-aged/elderly participants donated the most money to children, with no significant difference,  $p > 0.1$ . Middle-aged/elderly Naxi participants donated significantly less money to middle-aged recipients than did Han participants,  $p < 0.001$ , 95% CI = [39.41, 99.03]. They donated significantly more money to elderly recipients than did Han participants,  $p = 0.005$ , 95% CI = [14.18, 80.24]. No significant differences existed between the two ethnic groups of high school students in monetary donations to the three help recipients,  $ps > 0.1$ .

Further analysis showed that, similar to the time companionship scenario,

middle-aged/elderly Naxi participants donated money in descending order to children, elderly, and middle-aged recipients, with all differences significant (children vs. middle-aged,  $p < 0.001$ , 95% CI = [226.49, 309.61]; children vs. elderly,  $p < 0.001$ , 95% CI = [178.34, 268.70]; middle-aged vs. elderly,  $p = 0.018$ , 95% CI = [7.65, 81.41]). Naxi high school students donated significantly less money to elderly recipients than to the other two groups (vs. children,  $p < 0.001$ , 95% CI = [48.75, 115.90]; vs. middle-aged,  $p < 0.001$ , 95% CI = [41.48, 96.29]), with no significant difference between children and middle-aged recipients,  $p > 0.1$ , donating the least to elderly recipients. Middle-aged/elderly Han participants donated money in descending order to children, middle-aged, and elderly recipients, with all differences significant (children vs. middle-aged,  $p < 0.001$ , 95% CI = [136.64, 217.00]; children vs. elderly,  $p < 0.001$ , 95% CI = [205.03, 292.39]; middle-aged vs. elderly,  $p < 0.001$ , 95% CI = [36.24, 107.55]). Han high school students showed a similar donation pattern to middle-aged/elderly Han participants (children vs. middle-aged,  $p < 0.001$ , 95% CI = [25.01, 77.47]; children vs. elderly,  $p < 0.001$ , 95% CI = [80.04, 137.07]; middle-aged vs. elderly,  $p < 0.001$ , 95% CI = [34.04, 80.59]).

### (3) Time-Based Intellectual Support Scenario

The results are shown in Figure 5 [Figure 5: see original paper].

**Figure 5** Time allocation (minutes) for intellectual support to three help recipients.

ANOVA revealed a significant main effect of help recipient,  $F(2, 1818) = 70.60$ ,  $p < 0.001$ ,  $p^2 = 0.07$ . The interaction among ethnicity, group type, and help recipient was significant,  $F(2, 1818) = 8.59$ ,  $p < 0.001$ ,  $p^2 = 0.004$ . Simple effects analysis indicated no significant difference between the two ethnic groups in time allocated to children,  $p > 0.1$ . Middle-aged/elderly Naxi participants allocated significantly less time to middle-aged recipients than did Han participants,  $p < 0.001$ , 95% CI = [3.42, 9.20]. Middle-aged/elderly Naxi participants allocated significantly more time to elderly recipients than did Han participants,  $p = 0.001$ , 95% CI = [2.33, 9.21]. No significant differences existed between the two ethnic groups of high school students in time allocated to children and elderly recipients,  $ps > 0.1$ . Naxi high school students allocated significantly less time to middle-aged recipients than did Han high school students,  $p = 0.011$ , 95% CI = [0.61, 4.64].

Further analysis showed that, similar to the previous two helping scenarios, middle-aged/elderly Naxi participants allocated time in descending order to children, elderly, and middle-aged recipients, with all differences significant (children vs. middle-aged,  $p < 0.001$ , 95% CI = [16.65, 24.00]; children vs. elderly,  $p < 0.001$ , 95% CI = [3.57, 12.26]; middle-aged vs. elderly,  $p < 0.001$ , 95% CI = [8.49, 16.33]). Naxi high school students allocated the least time to middle-aged recipients, with significant differences from the other two groups (vs. children,  $p < 0.001$ , 95% CI = [2.97, 8.42]; vs. elderly,  $p < 0.001$ , 95% CI = [4.44, 10.24]),

but no significant difference between children and elderly recipients,  $p > 0.1$ . Middle-aged/elderly Han participants allocated the most time to children, with significant differences from the other two groups (vs. middle-aged,  $p < 0.001$ , 95% CI = [9.93, 17.04]; vs. elderly,  $p < 0.001$ , 95% CI = [8.95, 17.36]), but no significant difference between middle-aged and elderly recipients,  $p > 0.1$ . Han high school students allocated the most time to elderly recipients, with significant differences from the other two groups (vs. middle-aged,  $p = 0.002$ , 95% CI = [1.40, 6.33]; vs. children,  $p = 0.065$ , 95% CI = [-0.16, 5.30]), but no significant difference between children and middle-aged recipients,  $p > 0.1$ .

### 3.5 Summary

Overall, Experiment 2 showed the same trend as Experiment 1. Experiment 2 found that in all three helping scenarios, middle-aged/elderly participants from both ethnic groups donated the most money or allocated the most time to children, again confirming the influence of modern low fertility demographics and the Chinese concept of valuing descendant inheritance. Second, in all helping scenarios, except for children, middle-aged/elderly Naxi participants showed stronger helping intentions toward elderly recipients, while middle-aged/elderly Han participants were willing to donate more time and money to middle-aged recipients. Third, in time companionship and monetary assistance scenarios, high school students from both ethnic groups allocated the least time and money to elderly recipients. However, in the time-based intellectual support scenario, elderly recipients received more donations from high school students of both ethnic groups. These students provided corresponding explanations after the experiment, stating that middle-aged people could be taught to use mobile phones in relatively short time. This again demonstrates that, compared to their parents or grandparents, these high school students were more rational in adjusting allocation weights based on situational factors. Finally, Experiment 2 found that in all three helping scenarios, high school students from both ethnic groups showed no significant differences in money or time allocated to the three help recipients. This indicates that personality orientation differences between ethnic groups are disappearing.

In 1880, Powell first proposed the concept of “acculturation” to describe the similarities arising from cultural contact between different ethnic groups (Sokol-skaya & Valentonis, 2020). Li (1988) introduced this concept and defined it as “the process and result of two or more different cultures continuously borrowing and accepting each other’s cultural traits during contact, thereby increasing cultural similarity.” This study demonstrates that middle-aged/elderly Naxi participants have stronger respect for the elderly, while middle-aged/elderly Han participants have stronger esteem for the robust, both in security and helping scenarios.

The history of cultural evolution is a history of immigrant culture (Li, 2024). “So-called immigration refers to a process in which one culture flows holistically into another culture” (Guang, 2005). In Chinese history, frequent and

continuous ethnic migrations have had immeasurable impacts on both northern and southern cultures. Since the Eastern Jin and Southern and Northern Dynasties, due to frequent warfare and dynastic changes, Central Plains gentry families were forced to undertake multiple “Southern Crossings of the Elite.” Large-scale southward migration of northern populations gradually shifted the nation’s economic, political, and cultural centers southward. Liu Shiwei stated: “Prominent Central Plains families fled south to escape chaos, gathering in the Jiangnan region, and culture flourished daily under their influence” (Liu, 1996). The *Jiaqing Xin’an County Gazetteer*, Volume 2, *Geography· Customs*, records: “Since the Yongjia period, when Central Plains elites fled to the Lingbiao region, the gradual development of rituals and propriety in this county has its origins here.” According to statistics from *Huangming Tongji*, from the 4th year of the Hongwu reign (1371) to the 44th year of the Wanli reign (1616) over 246 years, among 244 top scholars (zhuangyuan, bangyan, tanhua, and huiyuan), 215 were from the south (Chen, 1983). Nomadic Sinicization was manifested not only in culture and rituals but also in social organization and economic life. Nomadic peoples evolved from tribes to registered households, capable of defending and building cities, and their social organization evolution was all related to Sinicization (Zhang & Yu, 2023). The southern economy also flourished: “The region along the sea and lakes has hundreds of thousands of hectares of fertile land, so valuable that even the areas between Hu and Du cannot compare” (Shen, 1974). Qian Mu concluded: “With the Eastern Jin’s southward crossing, the Yangtze River basin officially came to represent traditional China” (Li & Zhang, 2022).

“Discussing only Sinicization without discussing Hu-hua is not an attitude of seeking truth from facts” (Lin, 2000). Historically, nomadic peoples’ internal migrations and repeated contests for the Central Plains brought nomadic culture to northern Han peoples. Gu (1939) enumerated that major folk musical instruments such as the pipa, Qiang flute, and erhu were transmitted from Hu and Qiang peoples; the kang (heated bed) was brought by Liao and Jin peoples; chairs were transmitted from the Xiongnu; wearing pants was for convenience in horse riding; paper funeral objects were originally Liao customs; men wearing long robes and mandarin jackets and women wearing qipao during the Republic of China were Qing Dynasty systems; applying rouge and powder was also learned from Xiongnu women’s fashion. After defeat, Xiongnu people would sing, “Losing my Yanzhi (rouge) mountain leaves my women without color.” He argued that the lifestyles of Han people adopted from non-Han peoples were certainly much more numerous than those originally Han.

In summary, whether historically extinct ethnic groups or existing ones, all possess unique cultures. In interactions with other ethnic groups, these cultures inevitably radiate outward, exerting more or less influence on other groups and even being accepted by them. Cultural integration among Chinese ethnic groups, though not equal or equivalent in investment, is certainly not a one-way process but a bidirectional mutual acculturation process that has ultimately formed the splendid, highly inclusive Chinese culture. During this process, different cultural groups have gradually developed mutually integrated psychological characteris-

tics.

## 4.2 Production Method Transformation and Confucian Promotion Jointly Enhanced Respect for the Elderly Among Naxi Middle-Aged and Elderly Individuals

Ethnic migration and integration have injected fresh blood into Han culture, while ethnic minorities have also absorbed the essence of Han culture. This bidirectional acculturation is also reflected in attitudes toward people of different ages. Middle-aged and elderly Naxi participants showed stronger intentions to secure and help elderly people, while middle-aged and elderly Han participants showed stronger intentions to secure and help middle-aged individuals. This confirms that Naxi culture has subtly absorbed Confucian culture of respecting the elderly, while Hebei middle-aged and elderly Han participants have also acquired Hu characteristics of “esteeming the robust.”

The material environment for human survival plays a crucial role in shaping social and cultural institutions, concepts, and customs (Song & Bai, 1998). The Naxi people formed from ancient Qiang nomadic peoples in northwestern China who migrated southwestward. Naxi cultural artifacts “Kebiao” share similar sacrificial functions with “human-faced wooden plaques” unearthed in the northwest (Guo & He, 2015). The ancient Qiang practice of “clans having no fixed names, using father’s name and mother’s surname as clan names”—the patronymic naming system—is very common in Naxi society (Xu, 1978). The Naxi practice of guiding the souls of deceased elders northward follows the migration routes and journeys of ancestors (Zhao, 2004). Historical evidence confirms that Naxi ancestors have countless connections with ancient northwestern Qiang peoples. After settling in Lijiang, the suitable climate, fertile land, and abundant water sources provided superior natural conditions for engaging in agriculture. Fei (2018) stated: “Any nomadic people, once entering a refined agricultural society, will sooner or later actively integrate into the Han ethnic group.” The Naxi people are no exception. They gradually abandoned their nomadic life of migrating according to water and grass sources and transitioned to a life primarily based on agriculture. The status of elderly people quietly changed with social and economic development and transformation of production methods.

At the cultural level, Ming Dynasty Tusi chieftains, due to their admiration for Huaxia culture and the Qing Dynasty’s policy of replacing Tusi chieftains with government-appointed officials, promoted the large-scale spread of Confucian thought in the Lijiang region. The Mu clan chieftains, since the Yuan and Ming dynasties, vigorously promoted an open policy of “exploring Central Plains cultural context and absorbing the essence of all rivers,” actively learning and introducing Confucian culture. The *Ming History* praised: “Among all Tusi officials in Yunnan, those from Lijiang Mu clan were the first to know poetry, books, rituals, and righteousness.” Mu Zeng built the “Wanjuan Tower” and “Yusong Academy” in the Mu Mansion, collecting various ancient cultural books,

with a golden plaque hanging outside the tower reading “Tianyu Liufang” (meaning “go study” in Naxi). The Mu clan also invited Xu Xiake, Yang Shen, and others to spread orthodox Confucian culture. *Jian Mushi Xun Ci Zi Ji* records: “Study books and rituals, be loyal to the sovereign with utmost sincerity, love the people with utmost dedication, be filial to parents with utmost diligence, worship gods with utmost sincerity, and instruct children with utmost importance” (Yu & Yu, 2002). This was the core of the Mu clan chieftains’ family rules. These practices not only reflected the strong desire of Naxi upper elites during the Mu Mansion period to actively align with Han culture but also played a demonstrative role in guiding ordinary Naxi people to learn Confucian culture and abandon outdated customs, showcasing the entire Naxi society’ s cultural value pursuits.

The Qing Dynasty’ s policy of replacing Tusi chieftains with government-appointed officials accelerated the Sinicization process in Lingnan. Flow officials vigorously promoted Confucian education in Lijiang. They established academies, expanded Confucian temples, and widely set up charity schools, establishing a Confucian education system covering all social strata. The purpose of establishing charity schools was “to teach official pronunciation, instruct in rituals and propriety, teach writing, enable literacy and reasoning, and civilize barbarian peoples” (Yu, 2015), which proved highly effective in strengthening Naxi people’ s moral values and concepts. Reforms “initially still had 野性未驯 (unrestrained wildness), leading to 煽动蠢动 (inciting foolish actions),” but after decades of education, “ritual 熏陶 (influence) and music 陶 (cultivation), most nearby barbarian peoples learned from Han people, with customs not significantly different from Han people” (Liao, 2015). Confucian ethics and rituals centered on filial piety gradually became internalized in Naxi people’ s daily lives: “Festivals and rituals are mostly similar to those in Central Plains” (Xie, 2000). During ancestor worship, “an elderly person is always invited to sit in the place of honor, served first, and younger generations kneel and drink in order...no one dares to violate the order” (Duan, 2011). This custom of respecting the elderly also appears in other cultures derived from ancient Qiang peoples. When Qiang elders reach their sixtieth year, family members hold a “birthday celebration,” signifying that the elder has been relieved of the burden of raising children and can enjoy their later years (Xu, 2006). Qiang kinship cognition is also influenced by the culture of respecting the elderly, with faster reaction times and lower error rates for high-generation kinship terms (Li et al., 2014). Yi, Rgyalrong Tibetan, and Mosuo peoples also show generational effects in kinship terms, with faster reactions to senior kinship terms (Li & Zhang, 2019; Zhang et al., 2020).

### 4.3 Ethnic Migration and Regime Change Jointly Shaped the “Esteeming the Robust” Ethics of Han Middle-Aged and Elderly Individuals

The continuous internal migration of ancient nomadic peoples and their repeated establishment of rule in the Central Plains, along with multiple waves of southward Han migration, led to a surge in minority populations in the Heshuo region. An ethnic group’s influence in a region primarily depends on its population size. “The numerous assimilate the few, not the economically and culturally advanced assimilate the economically and culturally backward” (Gu, 2004). During the Wei-Jin Southern and Northern Dynasties period, large-scale internal migration of ethnic minorities and their mixed residence with Han peoples created a situation where “half the population in Guanzhong were barbarians” (Li, 2016). The Southern Liang Dynasty general Chen Qingzhi lamented: “Since the Jin and Song dynasties, Luoyang has been called a wasteland, and the area north of the Yangtze River is considered entirely barbarian” (Fan, 1978). Gu Yanwu of the late Ming Dynasty also stated: “In modern times, many Shandong clans descend from Jin and Yuan dynasties’ descendants” (Fei, 2018).

As large numbers of ethnic minorities migrated to the Central Plains and lived interspersed with Han peoples, Hu-Han interaction and integration manifested on one hand in the physical changes of Central Plains Han peoples. For example, under Liao rule, Youyun Han peoples showed more obvious “Hu-hua” characteristics, with robust and martial physiques similar to northern nomadic peoples (Zhang & Feng, 2022). On the other hand, nomadic customs such as valuing martial prowess over literature and esteeming the robust while neglecting the elderly gradually permeated Central Plains society, causing Central Plains culture to shift from a “family tradition” centered on filial piety and ritual propriety to one of “declining Confucianism and Daoism” (Ma & Mu, 2019). Du Mu wrote: “The scholar Lu Sheng, named Pei...at age twenty did not know that ancient people like the Duke of Zhou and Confucius existed, spending his time playing ball, drinking, horse riding, and hunting. His language and customs were all about attack, defense, and warfare...(entering Wangwu Mountain) he first heard of the *Classic of Filial Piety* and the *Analects*” (Wu, 2008). This was simply inconceivable in the Heshuo region, known as “unmatched in ritual, music, and propriety under heaven.” Liu Yuxi wrote: “North of the great river, the land is mighty and soldiers are elite, yet the world’s scholars despise it, regarding the Heshuo region as barbarian...” Sima Guang proposed the concept of “Heshuo customs,” referring to the unruly, strong, and difficult-to-govern nomadic habits of the Heshuo region (Mu, 2008). After the Jurchen, Khitan, and Mongol peoples contested the Central Plains, Heshuo was completely imbued with nomadic customs, with Han customs gradually disappearing—an unstoppable trend (Zhang & Hui, 2009). The Confucian ethical system centered on filial piety and brotherly respect declined, and it became common for brothers to abandon their parents after separating households (Huang, 1986). Contemporary Hebei middle-aged and elderly Han people, as mixed descendants of

nomadic and Han peoples, still carry some nomadic “herding” genes in their blood. These physiological and cultural “herding” genes have been preserved through various interpersonal interactions and practical activities and continue to influence the present day (Zhang & Qiao, 2018).

Is the “esteeming the robust” psychology of northern Han peoples influenced by the contemporary impact on the tradition of “respecting the elderly” in China? With modernization and the influence of individualism, the ancestor worship value centered on “continuing the family line” is gradually diminishing. Shrinking family sizes have led to marriage relationships becoming dominant, and Chinese culture, traditionally “centered on father-son relationships,” is gradually shifting to being “centered on marital relationships.” The concept of “old but not dead is a thief” (*Analects · Xianwen*) is widely spread among rural elderly people (Li & Zhang, 2015). However, this transformation is not unique to northern Han peoples; it also exists among southern Han peoples. Liu (2021) investigated 11 provinces including Hubei, Shandong, Jiangsu, Shanxi, Henan, and Guizhou, finding that since 1990, the suicide rate among rural elderly people has risen sharply and remained high. Qing (2007) conducted a suicide survey of 912 elderly people over 60 years old in nine administrative villages in Yuanjiang City, Hunan Province, finding that 150 elderly people reported seriously considering actively ending their lives, with a point prevalence of suicidal ideation of 16.4% among elderly people. Therefore, the difference in attitudes toward elderly people between Hebei Han and Yunnan Naxi peoples is primarily caused by cultural integration, with less influence from the impact on the tradition of “respecting the elderly.”

#### 4.4 The Deeply Rooted Chinese Value of Valuing Descendants and Modern Low Fertility Demographics Establish Children’ s Core Position

In Experiments 1 and 2, most middle-aged and elderly participants from both Han and Naxi ethnic groups chose children as the priority security target and allocated the most money and time to them. This contradicts our hypotheses. Two reasons account for this: first, the family value emphasizing bloodline inheritance is deeply embedded in the veins of all ethnic groups; second, against the backdrop of low fertility demographics, children have become the “core” and “hope” of families.

As early as the Warring States period, Huaxia people believed that an important path to realizing life value was the “three forms of immortality” : “The highest is establishing virtue, second is establishing achievement, third is establishing discourse. Though long, they are not abandoned; this is called immortality” (*Zuo Zhuan · Xianggong 24th Year*). The *Classic of Filial Piety* states: “Establish oneself and follow the Dao, making a name for later generations to glorify one’ s parents; this is the ultimate filial piety” (Hu & Chen, 2007). However, among the multitude, not everyone can achieve self-realization through “es-

tablishing virtue, achievement, and discourse.” Most people can only achieve biological immortality through genetic transmission. In Central Plains Han society, prosperous descendants mean the continuation of parents’ lives and are key to family prosperity or decline. Mencius said: “Of unfilial acts, having no descendants is the worst” (*Lilou · Shang*). The *Classic of Filial Piety* states: “Parents give birth; continuation is the greatest” (Hu & Chen, 2007). The *Book of Rites* says: “Grandchildren are called ancestors’ successors,” meaning grandchildren are the continuation of ancestors’ bloodlines. Zhang et al. (2013) found that in condolence contexts, Han participants separately categorized grandsons and granddaughters, reflecting the importance placed on bloodline continuation. Moreover, in ancient agricultural societies, the amount of labor directly affected production scale and efficiency. “Many children” symbolized “high productivity.” When elderly people’s physical strength declined, young and middle-aged people replaced them as the main labor force to ensure the continuation of production and life. The Naxi people, with a mountain farming and herding economy, possess cultural characteristics of both nomadic and agricultural cultures (Mu, 2002). Similar to agricultural peoples, nomadic peoples’ emphasis on descendants is also closely related to production methods. Hunting and gathering primarily rely on young and strong individuals, and young and middle-aged people are also the core armed forces resisting foreign invasions (Ju, 2017). The *New Book of Tang* records: “Khitan people: when children die, parents cry day and night; when parents die, they do not cry, and there is no mourning period.” The harsh living environment led to low population survival rates among nomadic peoples, which is also why they valued descendants. For tribal life continuation, women became tools for population reproduction and were considered valuable property of the tribe. Historically, the “levirate marriage” system of “marrying stepmothers and sisters-in-law” was widely practiced among nomadic peoples. The *Yuan History* records: “According to national customs, when the father dies, the son marries his stepmother; when brothers die, they marry their sisters-in-law.” The purpose of this marriage system was to ensure family population prosperity and property safety (Dong, 2007). This character orientation emphasizing descendants also influenced the conceptual structure of kinship terms among Naxi and Jino peoples, both having a “caregiver/care-receiver” dimension (Cui et al., 2012; Zhang & He, 2004). Although with the modernization of China’s agriculture and animal husbandry, the concept of “more people, more power” has weakened, the descendant-valuing culture that has lasted for thousands of years still exerts considerable influence on Chinese people.

Low fertility refers to the phenomenon of gradually decreasing child populations in society due to declining fertility levels (Mu, 2014). Similar to most countries worldwide, modernization has shaped China’s low-fertility culture (Wu & Chen, 2022). Against this backdrop, each child becomes extremely precious in families. In daily family resource allocation and consumption structures, children’s needs and development are the primary considerations. This high emphasis on children leads middle-aged and elderly people from both Han and Naxi ethnic groups to place children’s safety and interests first in any context.

## 4.5 Why High School Students' Results Differ from Expectations

Experiment 1 found that high school students from both ethnic groups prioritized children or fathers for food and clothing, with the lowest proportion choosing to prioritize grandfathers. Experiment 2 found that in time companionship and monetary assistance scenarios, high school students from both ethnic groups gave the least time and money to elderly recipients. Experiment 2 also found that in all three helping scenarios, high school students from both ethnic groups showed almost no significant differences in money or time allocated to the three help recipients. These results do not match our hypotheses. What caused these outcomes?

In contemporary society, due to heavy academic pressure, high school students have been in a singular, cyclical living environment of “school-home, study-eat” since primary school. The roles of family, ethnic, and social fields in constructing moral systems and value concepts are far lower than that of the school field. In the school field, exam-oriented education emphasizes cultivating students' thinking abilities to objectively analyze and solve problems from a bystander perspective. Therefore, compared to their parents or grandparents, high school students are more rational in moral contexts and more inclined to maximize group interests, exhibiting more collectivistic motivations in security and helping scenarios. That is, high school students from both ethnic groups believed that choosing children or fathers could maximize the preservation and continuation of a family's bloodline, minimizing family loss. This also indicates that high school students from both ethnic groups exhibit more outcome-based thinking. Lammers and Stapel (2009) distinguished two types of moral decision-making: rules-based and outcome-based thinking. The former emphasizes that decision-making processes must comply with established social ethics and behavioral rules, while the latter pursues interest or benefit maximization. This result also shows that the ideological concepts of high school students from both ethnic groups are no longer like those of their parents (primarily relying on their respective traditional cultures). Through school education, they have accepted unified values transmitted by modern culture.

Under the background of accelerated national population mobility, ethnic integration, and modernization due to reform and opening up, personality differences between ethnic groups are gradually diminishing (Wang & Wang, 2024). Due to their sharp thinking abilities and personality traits of quickly exploring and accepting new things, youth are participants and beneficiaries of social transformation and cultural change. Under the tide of the times, young people's ethnic group identity has seriously shifted toward modern social identity, and ethnic character orientations are increasingly showing a trend of convergence.

## 4.6 Psychological Mechanisms of Psychological Fusion Caused by Cultural Integration

This study's results indicate that cultural integration leads to psychological fusion—that is, “Hu-hua” among Hebei Han and Sinicization among Yunnan Naxi—which is clearly reflected in age perspectives. The primary reason is that throughout Chinese history, culture has been the most important criterion for distinguishing ethnic groups. This tradition originated with Confucius. Confucius said: “If not for Guan Zhong, we would be wearing our hair loose and lapels left” (*Analects · Xianwen*). This means: Without Guan Zhong, we would all wear our hair loose and left-lapelled clothing, becoming barbarians. In ancient times, loose hair and left lapels were marks of barbarians, while bound hair and right lapels were Huaxia traditions—both hairstyles and clothing styles belong to the cultural domain. Why does cultural integration lead to psychological fusion? Cultural adaptation is key. Berry (1987) defined acculturation as the cultural and psychological change process that occurs during sustained and direct contact between two or more different cultural groups, which may happen in one group or both contact parties. Berry (2005) argued that the acculturation process depends on the degree of integration into the new culture and the degree of maintaining original cultural identity. Based on different combinations of these two dimensions, four acculturation patterns are formed: assimilation, integration, separation, and marginalization. Psychological fusion caused by cultural integration belongs to the integration pattern. In the integration pattern, individuals freely switch between their own culture and the new culture, and cultural diversity is respected and maintained (Wan, 2017; Ge et al., 2024). Psychological mechanisms of psychological fusion caused by cultural integration may include: (1) Cognitive assimilation: Two ethnic groups develop similar views on the same things through mutual influence during long-term contact. (2) Value internalization: Contacting ethnic groups internalize each other's values. “Respecting the elderly” and “esteeming the robust” are parts of Huaxia and nomadic values. (3) Social identity transformation. One contacting party develops identification with the other. The *New Book of Tang · Zhang Jiazhen Biography* records: In Youzhou, “the custom calls Lushan and Siming the ‘two sages.’ Hongjing, to punish the initial chaos and change customs, excavated tombs and destroyed coffins, making the masses increasingly unhappy.” An Lushan and Shi Siming were both Hu people and Tang Dynasty rebels, yet Youzhou people regarded them as “saints,” indicating their profound identification with nomadic peoples. In the late Northern Song Dynasty, when the Song Dynasty broke its alliance with the Liao Kingdom and formed the Sea Pact with the Jin Kingdom to jointly destroy Liao and reclaim the Sixteen Prefectures of Yanyun, Han people in Youyun were universally dissatisfied, resenting the Song people's breach of faith (Zhang & Feng, 2022). In the cultural integration process, the degree of mutual influence between two different ethnic groups is not equal: the culture of the group in a dominant position has greater influence on the group in a subordinate position, while the culture of the group in a subordinate position has less influence on the group in a dominant position. Hebei

was repeatedly ruled by nomadic peoples who established regimes in the Central Plains, receiving great influence from nomadic cultures and naturally acquiring nomadic psychological characteristics. Naxi chieftains historically admired Han culture, receiving great influence from Han culture and thus acquiring Han psychological characteristics. This is the mechanism by which cultural integration leads to psychological fusion and subsequently influences security and helping behavioral intentions. In short, in the long river of Chinese ethnic groups' exchanges, interactions, and integration, the fusion of nomadic and agricultural civilizations was not unidirectional assimilation but presented a bidirectional integration trend in cultural cognition and behavioral patterns. Middle-aged and elderly Naxi and Han participants both demonstrated psychological traces of cultural integration in security and helping behaviors. Middle-aged and elderly Naxi participants showed stronger respect for the elderly, while middle-aged and elderly Han participants showed stronger esteem for the robust. This indicates that through mutual borrowing, absorption, and adaptation, minority ethnic cultures and Huaxia culture have promoted psychological fusion and jointly constituted the cultural genes and psychological foundation for the formation of the Chinese national community.

#### 4.7 Contributions and Limitations of This Study

This study's findings are significant for establishing the academic system, disciplinary system, and discourse system of Chinese philosophy and social sciences. Chen Yinke's "Hu-hua and Sinicization Theory" ("Theory of Transformation and Recognition") is an intellectual essence emerging from research on the formation history of the Chinese nation and a Chinese-characteristic ethnic identity theory. The "Theory of Transformation and Recognition" originated from historical and ethnological research, and this study provides empirical evidence for this theory. Another theoretical contribution of this study is revealing that cultural integration leads to psychological fusion, and that the pluralistic unity pattern of the Chinese nation will ultimately be reflected as pluralistic unity in psychology and spirit—that is, within the Chinese national community, ethnic groups are "you are in me and I am in you" not only in bloodlines but also in psychology and spirit. This is an important psychological foundation for the formation of the Chinese national community. Therefore, this study's findings represent an important development of the pluralistic unity pattern theory of the Chinese nation and provide solid psychological evidence for forging a strong sense of community for the Chinese nation.

This study also has limitations. For example, in terms of participant representativeness, while using Hebei Han people to represent "Hu-hua" Han peoples is feasible, using only Naxi people as representatives of ethnic minorities influenced by Huaxia culture narrows the research scope. For instance, the ancestors of the Yi people living in southern China also had close connections with ancient Qiang peoples, and modern Yi people also have strong traditions of respecting the elderly. Yi people honor filial piety. When Yi people slaughter sheep, they

always save the shoulder to give to elders among relatives and friends. During the Yi New Year, younger generations give New Year gifts such as pork or pig heads and wine to elders to show filial piety and closeness (Waxi Quyi & Luo, 2018). In experimental design, the age of middle-aged and elderly participants was not finely distinguished. In research methods, although scenario testing has high ecological validity, future research should also employ cognitive psychology and cognitive neuroscience methods to increase the reliability of conclusions.

## Conclusions

- (1) Cultural integration influences the willingness of Hebei Han and Yunnan Naxi peoples to provide security and helping behaviors. Hebei middle-aged and elderly Han people, influenced by nomadic culture, tend to prioritize middle-aged individuals in security scenarios and show stronger helping intentions toward middle-aged people. Yunnan middle-aged and elderly Naxi people, influenced by Han culture, tend to prioritize elderly people in security scenarios and show stronger helping intentions toward elderly people.
- (2) The security and helping behavioral intentions of high school students from Hebei Han and Yunnan Naxi peoples are converging, indicating that personality orientation differences between the two ethnic groups are gradually diminishing in the modernization process.
- (3) Cultural integration leads to psychological fusion, manifesting as “you are in me and I am in you” at the psychological and spiritual levels.

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