Ritual Actions, Symbolic Meaning, and Positive Emotions Enhance Sense of Control

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Abstract

Taking the traditional cultural ritual "Jing Guozhuang" of the Pumi people in China as an example, this study employed methods such as recall tasks and creating novel rituals to examine the effects of ritual actions, symbolic meanings, and positive emotions on the sense of control among Pumi adolescents and adults. Results indicate that adolescents familiar with the actions and symbolic meanings of the Jing Guozhuang ritual or those with richer emotional experiences exhibit a stronger sense of control. The influence of ritual actions and symbolic meanings on sense of control follows a dual-pathway mechanism: ritual actions directly enhance individuals' sense of control, whereas symbolic meanings indirectly enhance individuals' sense of control through positive emotions. The relationship between symbolic meanings and sense of control also varies by ritual subject: praying for blessings indirectly enhances adolescents' sense of control through positive emotions, while expressing gratitude indirectly enhances adults' sense of control through positive emotions. The findings provide important insights for investigating the effects of ritual actions, symbolic meanings, and positive emotions on individuals' sense of control.

Full Text

How Ritual Actions, Symbolic Meanings, and Positive Emotions Enhance Perceived Control: A Dual-Pathway Mechanism

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Abstract

This study examined how ritual actions, symbolic meanings, and positive emotions influence perceived control among Pumi adolescents and adults, using the

traditional cultural ritual of "Jing Guozhuang" (Guozhuang worship) among China' s Pumi people as a case study. Through recall tasks and the creation of novel rituals, we investigated the psychological mechanisms underlying these effects. The results revealed that Pumi adolescents who were more familiar with the ritual actions and symbolic meanings of Guozhuang worship, or who experienced stronger emotional responses during the ritual, reported greater perceived control. A dual-pathway mechanism emerged: ritual actions directly enhanced perceived control, while symbolic meanings indirectly enhanced perceived control through positive emotions. Furthermore, the relationship between symbolic meaning and perceived control differed by ritual participant: among adolescents, seeking ancestral blessings indirectly enhanced perceived control via positive emotions, whereas among adults, expressing gratitude to ancestors indirectly enhanced perceived control via positive emotions. These findings offer important insights into how ritual actions, symbolic meanings, and positive emotions influence individuals' sense of control.

Keywords: perceived control, ritual action, symbolic meaning, positive emotions, Guozhuang worship

1 Introduction

Perceived control represents a crucial psychological resource and a key variable in mental health (Infurna et al., 2011; Ruthig et al., 2007). Enhancing perceived control not only improves self-efficacy and well-being and promotes adaptive coping strategies (Alonso-Ferres et al., 2019; Drewelies et al., 2018), but also facilitates better adaptation to social environments (Zhou et al., 2012), improves psychological distance perception regarding negative events such as disasters (Han et al., 2018), and increases health levels and life satisfaction (Alonso-Ferres et al., 2019; Drewelies et al., 2018; Zheng et al., 2020). Moreover, enhanced perceived control can reduce aggressive and antisocial behavior (Warburton et al., 2006), increase tolerance for painful experiences, and promote prosocial behavior (Xu et al., 2020). Therefore, investigating the psychological mechanisms of perceived control holds significant theoretical and practical importance.

Rituals play a vital role in social life. As anthropologist Mary Douglas (1966/2020, p. 101) observed: "Human beings, as social animals, are also ritual animals. ···It is no exaggeration to say that ritual is to society what words are to thought. We may understand something before finding the right words for it, but without symbolic behavior, there can be no social relations." One important function of rituals for humans is to gain a sense of environmental control through supernatural means or by altering the symbolic meaning of things (Kapitány & Nielsen, 2015). Research has confirmed that when people face uncertain situations or dilemmas, the emotion-regulating function of ritual actions can enhance perceived control (Martin et al., 2015; Norton & Gino, 2014). However, rituals are not composed solely of actions. In addition to specific actions, rituals include symbolic meanings and purposes (Hobson et

al., 2018). In daily life, people do not necessarily perform rituals only when facing difficulties or challenges; some cultural rituals (such as ancestor worship ceremonies) are held at fixed times. Conventional rituals are ubiquitous across cultures (Legare et al., 2015). Nevertheless, empirical investigation of the relationship between conventional rituals and perceived control remains lacking. This study uses the Guozhuang worship ritual of the Pumi people in northwestern Yunnan, China, as a case study to examine how ritual actions, symbolic meanings, and positive emotions influence perceived control through this traditional cultural ritual performed in daily life.

1.1 Elements and Characteristics of Rituals

Rituals are defined as sequences of actions characterized by rigidity, patterning, and repetition, embedded within a larger system of symbols and meanings, yet lacking instrumental purpose (Hobson et al., 2018). Rituals comprise three elements: actions, symbolic meanings, and purposes (Ran et al., 2018). What makes these elements ritualistic are their specific characteristics: actions are rigid, patterned, and repetitive; symbolic meanings are implicit in rules; and purposes are non-instrumental. Rigidity refers to the degree to which behavior conforms to a script, reflecting the awareness that rituals should be performed with precision (Boyer & Liénard, 2006). Repetition refers to the recurrence of identical actions, gestures, or utterances (Park, 1999). Patterning refers to the invariant nature of rituals, which typically require strict rule adherence, and such invariant rules often enhance ritual meaning. The meaning of rituals is expressed through publicly observable symbolic rules; removing these symbolic meanings makes rituals appear arbitrary and causes them to lose their inherent value (Hobson et al., 2018). For instance, Brooks et al. (2016) noted that in a "rain dance," fingers point upward. Those who understand this action' s meaning (the rule) recognize it as a plea for rain, while those unfamiliar with its meaning might misinterpret it as pointing to a particular location.

The relationship between ritual actions and ritual purposes exhibits causal opacity, meaning that from the perspective of behavioral outcomes, one cannot explain how a specific action leads to a desired result; there is no observable physical causal relationship between the specific action (hands raised upward) and the desired outcome (rain) (Kapitány & Nielsen, 2017; Zou et al., 2018). Consequently, ritual purposes are non-instrumental and difficult to verify.

Ritual actions and symbolic meanings are inseparable. However, existing research has either considered only ritual actions, such as Fischer et al. (2013) examining the effect of synchronous actions on group entitativity, or studied the function of some "ritual" in general terms, such as Norton and Gino (2014) investigating the role of rituals in alleviating grief after loss, or Crespo et al. (2011) examining the relationship between family rituals and family cohesion. We argue that simultaneously considering both elements can more clearly reflect the psychological functions and mechanisms of rituals.

1.2 The Relationship Between Ritual Actions and Perceived Control

Ritual actions are associated with enhanced perceived control. Two main explanations dominate this relationship: (1) **Compensatory Control Theory** suggests that ritual actions can serve as a means of compensating for control, helping people cope with negative feelings brought by uncertainty, regain psychological control, and better adapt to life (Legare & Souza, 2014; Norton & Gino, 2014). Malinowski (1948) found that for residents of the Trobriand Islands in New Guinea, ritual behaviors performed before fishing expeditions could reduce the uncertainty associated with deep-sea fishing. On university campuses, 70% of students adopt ritual behaviors to improve exam performance (Gallagher & Lewis, 2010). (2) **Evolutionary Precautionary Systems Theory** posits that rigid, repetitive, and redundant behaviors represent a cognitive-motivational adaptation formed when facing danger, serving as a buffering mechanism for coping with stress and traumatic events (Boyer & Liénard, 2006). Regardless of the theoretical perspective, both agree that ritual actions can enhance perceived control.

The Pumi people are one of China' s ethnic groups with a long history and ancient culture, with a current population of over 40,000, primarily distributed in Lanping Bai and Pumi Autonomous County and Ninglang Yi Autonomous County in Yunnan Province. According to historical records, the Pumi people, formerly known as "Xifan," originated from the ancient Di-Qiang ethnic group and practice Tibetan Buddhism as well as the Hangui religion. The Pumi people have rich folk rituals, among which "Jing Guozhuang" is prominent. Every Pumi family has a fire pit in their main room, with a rectangular or round white stone erected in front of it, called "Kuolu" in the Pumi language, meaning Guozhuang stone. "Kuolu" embodies the meaning of ancestors, and Pumi people believe it is the incarnation of ancestors from past generations (Xiong, 2015). The Guozhuang worship ritual has specific action units. During major ceremonies, the action sequence includes decorating "Kuolu," placing various offerings, setting off firecrackers, elders chanting ancestral praises, dancing around the fire pit, and inviting ancestors to enjoy the food (Zhang, 2000). Pumi people also worship Guozhuang before each meal and when guests arrive. During Guozhuang worship, people call out the names of ancestors generation by generation, inviting them to enjoy the offerings. Some can recite over 30 generations, always beginning with the common ancestor of the Pumi people, "Juewubuzhidong" (Xiong, 2015). Since the ritual actions of "Jing Guozhuang" are repeatedly performed in daily life, we can expect them to enhance Pumi people' s perceived control.

1.3 The Influence of Ritual Symbolic Meanings on Perceived Control

Existing research has emphasized examining the impact of ritual actions on perceived control. To separate actions from the symbolic meanings of cultural rituals, researchers often create novel ritual actions (Hobson et al., 2017; Norton & Gino, 2014; Tian et al., 2018). However, Park (1999) pointed out that

although both repetitive, rigid actions and symbolic meanings can influence ritual efficacy, symbolic meaning is more important. Brooks et al. (2016) also found that symbolic meaning determines whether rituals influence perceived control.

Seeking ancestral blessings or expressing gratitude to ancestors are common symbolic meanings in ancestor worship rituals. Praying for ancestral protection in rituals, believing that deceased ancestors can influence the lives of their descendants, is achieved through a series of ancestor worship rituals (Se, 2012). Research has found that Balinese Hindus perform ancestor worship rituals daily. Compared with the Malagasy Vezo, who rarely hold such rituals, Balinese Hindus are more likely to believe in the existence of ancestral spiritual power and its influence on their current lives (Sebestény & Emmons, 2017). Expressing reverence and gratitude to ancestors in rituals represents an emotional expression of the blood connection between oneself and one' s ancestors.

Gratitude can enhance self-control (DeSteno et al., 2014; Ping & Peng, 2018) and can also increase individuals' control over risky situations by improving coping styles (Wood et al., 2007). The Pumi people have a strong concept of respecting the elderly. After the death of an elder, Pumi people have a unique funeral ceremony called "Shibironken,"in which the most important part involves relatives specifically reciting the genealogical names of ancestors to the deceased. Through this ritual, they ensure that the souls of deceased parents can return to their homeland to become ancestral gods, which represents the best destination for the deceased and the best expression of gratitude from the living for their parents' nurturing (Xiong, 2015). Therefore, we can expect that in the "Jing Guozhuang" ritual, both seeking ancestral blessings and expressing gratitude can enhance Pumi people' s perceived control. However, since ritual hosts are adults and adolescents are mostly observers or only participate in performing some actions, the influence of ritual symbolic meanings on perceived control may differ between adolescents and adults.

1.4 Ritual Enhancement of Perceived Control: The Mediating Role of Positive Emotions

Rituals not only reduce negative emotions (Brooks et al., 2016; Norton & Gino, 2014) but also increase positive emotions. Research demonstrates that rituals promote greater participatory experiences and enhance consumption enjoyment and pleasure (Vohs et al., 2013). When performing rituals, people experience belonging to a larger category such as a group, a belief system, or a universe, and perceiving the symbolic meaning of rituals provides comfort (Hobson et al., 2018). Positive emotions can predict enhanced perceived control (Ruthig et al., 2008). Rituals enhance perceived control through the evocation of positive emotions.

In summary, this study conducted three experiments to examine the influence of ritual actions, symbolic meanings, and positive emotions on perceived control.

Experiment 1 used a recall task to investigate Pumi adolescents' ritual actions, symbolic meanings, and positive emotions during Guozhuang worship, providing an initial exploration of rituals' influence on perceived control. Experiment 2 extracted core features of Guozhuang worship to create a novel ritual, examining the effects of ritual actions, symbolic meanings, and positive emotions on Pumi adolescents' perceived control. Experiment 3 used a recall task to activate the context of Guozhuang worship and explored the influence of ritual actions, symbolic meanings, and positive emotions on perceived control among Pumi adults.

2 Experiment 1: The Relationship Between Guozhuang Worship and Perceived Control Among Pumi Adolescents

2.1 Participants

Eighty Pumi adolescents from a nine-year integrated school in Ninglang Yi Autonomous County, Yunnan Province, participated in the study. The final sample consisted of 73 valid participants (32 boys and 41 girls) with a mean age of 12.71 $\pm$ 1.75 years. Using the recall task paradigm from Norton and Gino' s (2014) study on rituals performed by American college students coping with loss, we activated Pumi adolescents' memories of "Jing Guozhuang" and classified participants into high-involvement and low-involvement groups based on the content of their recollections.

2.2 Materials and Measures

Recall Task Materials: Two experts from the Ninglang Yi Autonomous County Pumi Culture Protection Association evaluated whether the instructions conformed to the actual situation of the Pumi people' s Guozhuang worship ritual, whether the wording was accurate, and whether it violated ethnic customs or sentiments. After incorporating the experts' feedback, the final instructions read: "Dear students: Hello! During daily meals, the Wuxi Festival, the Spring Festival, and other major holidays, as well as during engagements/weddings and when guests arrive, Pumi people always perform the Guozhuang worship ritual, first honoring the gods of heaven and earth, then worshipping ancestors. Please write a short essay based on what you have participated in or observed regarding ancestor worship during Guozhuang worship. For example, what your family members and you did, what was said, what you felt—anything related to this event, the more you write, the better."

Perceived Control Scale: We adopted and revised three items from Norton and Gino (2014): (1) "I feel I have lost control"; (2) "I feel very helpless"; (3) "I feel powerless." Items were rated on a 5-point scale (1 = completely disagree, 2 = somewhat disagree, 3 = slightly agree, 4 = moderately agree, 5 = completely agree) and reverse-scored, with higher total scores indicating stronger perceived control. Norton and Gino' s (2014) original study used four items, with the fourth item "To what extent do you feel things are under control?" also reverse-

scored, achieving a reliability coefficient of $\alpha = 0.87$. Because this fourth item did not match the ritual context of our study (Guozhuang worship does not refer to a specific matter), we did not adopt it. Using only three items reduced reliability to $\alpha = 0.62$, which remains within an acceptable range (Wu, 2010).

2.3 Procedure

The experiment was conducted in a quiet lecture hall. After participants were seated, the experimenter distributed A4 sheets containing the instructions. Students were not allowed to talk to each other or copy each other' s work, and the experimenter strictly supervised participants throughout the material completion process. Participants were permitted to use pinyin for characters they could not write. After 30 minutes, materials were collected uniformly, and then the perceived control scale was distributed and completed.

2.4 Statistical Analysis

First, after carefully reviewing participants' responses, seven questionnaires that did not follow instructions were eliminated. The valid recall content from 73 participants was then organized. Based on preliminary field investigations, Guozhuang worship rituals are typically performed by senior family members. To verify this conclusion, the ritual performer was coded as one analysis unit. Based on previous research suggesting that ritual actions, symbolic meanings, and positive emotions may influence perceived control, ritual actions, meanings, and positive emotions were each coded as separate analysis units. Each participant' s responses across these four units were systematically coded.

Second, participants were divided into high-involvement (n = 36) and low-involvement (n = 37) groups based on their descriptions of Guozhuang worship. Participants meeting at least two of the following three criteria were classified as high-involvement: (1) having personally performed ritual actions (descriptions included personal participation in Guozhuang worship actions, such as being specifically asked by family members to participate in or perform parts of the ritual, including placing food, kowtowing, making wishes, etc.); (2) being familiar with ritual details (providing specific descriptions of Guozhuang worship actions and symbolic meanings, with clear descriptions of ritual rules and requirements); (3) having strong emotional experiences (expressing emotions such as solemnity or sacredness). Participants meeting at least two of the following three criteria were classified as low-involvement: (1) lacking experience performing ritual actions (no descriptions of participating in material preparation or performing ritual actions); (2) being unfamiliar with ritual details (vague descriptions of Guozhuang worship, mentioning only when it occurs without describing how it is performed or its meaning); (3) lacking emotional descriptions. Because frequency calculations were not involved, a focus group discussion determined participant grouping: one psychology professor and eight master' s students independently assigned participants to groups based on their written materials. When agreement reached 85% or higher, the grouping was

finalized; otherwise, dissenting members presented their views and all members reviewed the materials again until consensus was reached.

2.5 Results and Analysis

Among the 73 Pumi adolescents' descriptions of Guozhuang worship: (1) **Ritual performers:** Elders or seniors (37 participants, 50.7%); father or mother (13 participants, 17.8%); grandfather or grandmother (12 participants, 16.4%); no title mentioned (11 participants, 15.1%). This indicates that Guozhuang worship is generally hosted by senior family members. (2) **Guozhuang worship actions:** The most frequently mentioned actions were placing rice, fruit, and other offerings on the Guozhuang before meals (44 participants, 60.27%); kowtowing (20 participants, 27.40%); sprinkling wine on the Guozhuang (19 participants, 26.03%); burning incense (14 participants, 19.18%); and burning pine branches (10 participants, 13.70%), among 13 total action types. Twenty-three participants (31.5%) had experience performing certain Guozhuang worship actions as arranged by elders. (3) **Symbolic meanings:** Thirty-three participants (45.21%) mentioned seeking blessings; 11 participants (15.07%) mentioned expressing gratitude to ancestors; and 29 participants (39.73%) did not mention symbolic meaning. (4) **Positive emotions:** Happiness (20 participants, 27.40%); joy (9 participants, 12.33%); sense of sacredness (6 participants, 8.22%); sense of solemnity (5 participants, 6.85%).

Independent samples t-test revealed that the perceived control score in the high-involvement group (13.89 ± 1.65) was significantly higher than that in the low-involvement group (12.97 ± 2.15), $t(71) = 2.04$, $p = 0.046$, Cohen' s $d = 0.48$. See Figure 1 [Figure 1: see original paper].

2.6 Discussion

Experiment 1 demonstrated that Pumi adolescents with greater participation in Guozhuang worship, more familiarity with ritual actions, rules, and meanings, and stronger emotional experiences reported higher perceived control, confirming that Guozhuang worship is related to perceived control among Pumi adolescents. Previous research has shown that ritual conditions enhance perceived control compared to no-ritual conditions (Mitkidis et al., 2017; Norton & Gino, 2014; Vohs et al., 2013). However, because participants' recollections confounded factors such as actions, symbolic meanings, emotions, and familiarity with rituals, Experiment 1 could not clarify how these factors contribute to enhanced perceived control. Experiment 2 therefore designed a novel ritual to separate actions from symbolic meanings and exclude interference from familiarity, further examining the influence of ritual actions, symbolic meanings, and accompanying positive emotions on perceived control enhancement.

3 Experiment 2: Effects of a Novel Ritual on Perceived Control Among Pumi Adolescents

Based on the Guozhuang worship actions collected in Experiment 1, Experiment 2 created a novel ritual to test whether ritual actions and symbolic meanings could enhance perceived control and to analyze the mediating role of positive emotions in this process.

3.1 Participants

Using G*Power (Faul et al., 2007) to calculate sample size, we determined that 81 participants were needed to achieve a medium effect size of f = 0.25 with 80% statistical power. We recruited 100 students in grades 7-9 from two middle schools in Ninglang Yi Autonomous County (who had not participated in Experiment 1). Four participants did not complete the entire experiment, resulting in a final valid sample of 96 participants (52 boys and 44 girls) with a mean age of 13.68 ± 1.02 years.

3.2 Design

A 2 (ritual action: action vs. no action) × 3 (symbolic meaning: gratitude vs. blessing vs. no meaning expression) mixed design was employed, with ritual action as a within-subjects variable and symbolic meaning as a between-subjects variable.

3.3 Materials and Measures

(1) Perceived Control Scale: Same as Experiment 1.

(2) Positive Emotions Questionnaire: We selected the emotional well-being dimension from the Brief Mental Health Continuum Scale (Yin & He, 2012), which includes three items: "I feel happy" ; "I find life enjoyable" ; "I feel satisfied." Items were rated on a 5-point scale (1 = completely disagree to 5 = completely agree), $\alpha = 0.74$, with higher total scores indicating more positive emotions.

(3) Materials: These included a ritual demonstration video, a picture library of 130 neutral images, cards numbered 1-5, and one orange highlighter. The voice-over for instructions was recorded by the same young female voice across all experimental conditions, presenting corresponding stimulus materials according to experimental condition.

In the ritual action condition, the stimulus material was a 10-11 minute ritual demonstration video (three versions corresponding to different symbolic meaning groups: gratitude/blessing/no expression). In each version, the ritual action demonstrator was the same young male (with face mosaic processing) wearing identical clothing.

In the no-action condition, participants viewed neutral images randomly selected from the 130-image library, presented at a switching frequency of 2 seconds per image for 10 minutes. The library contained 86 images of daily necessities and 46 images of transportation. Prior to the experiment, 33 psychology master' s students rated all neutral images on three dimensions (pleasure, arousal, dominance) using a 1-9 scale. Results indicated that the images met requirements (see Table 1).

Table 1 Mean (SD) Ratings of Neutral Images on Pleasure, Arousal, and Dominance
4.57 (1.60) 4.55 (1.65) 4.45 (1.78) 4.53 (1.77) 5.29 (2.20) 5.05 (1.92)

3.4 Procedure

The experimental procedure was evaluated by experts from the Ninglang Yi Autonomous County Pumi Culture Protection Association, who confirmed that it would not cause religious offense.

The experiment was conducted in individual rooms, with participants randomly assigned to the gratitude (n = 31), blessing (n = 33), or no expression (n = 32) groups. The procedure was presented via computer using E-Prime 3.0.

In the ritual action condition, the procedure consisted of practice and formal experimental phases. During practice, participants followed the person in the video to practice ritual actions. The instructions were: "Below you will see a video of an ancestor worship ritual. First is an introduction to items related to the ancestor worship ritual: In the area marked with numbers 1-5 in the middle of the table in front of you, there are 5 cards numbered 1-5 on the left, and a pen on the right. Next, please follow the person in the video to perform the same ancestor worship ritual actions and remember them.

Step 1: Pick up the card labeled '1' from the left with both hands and raise it above your head.
Step 2: Slowly bend down and place the card in the area marked '1' on the table.
Step 3: Again pick up the card labeled '2' from the left with both hands, raise it above your head, slowly bend down, and place it in the area marked '2' on the table. Next, use the same action to place the remaining cards in their corresponding areas on the table.
Step 4: Pick up the pen from the right side of the table with both hands and hold it to your chest. Close your eyes and follow along saying: 'May ancestors bless me with peace and smoothness' (blessing group), repeat 3 times / 'Thank you ancestors for giving me life' (gratitude group), repeat 3 times / Simply stand quietly with eyes closed for 15 seconds (no expression group). Finally, open your eyes and place the pen on the red strip on the table. Now, you will follow the person in the video to complete the ancestor worship ritual once in full.

If you can perform this ritual proficiently, please press the 'Y' key to enter the

formal experiment. If you cannot perform it proficiently yet, please press the 'N' key to return to the previous stage."

In the formal experimental phase, the instructions were: "Now, please seriously perform the ancestor worship ritual you just learned. You have sufficient time; please follow the speed in the video, neither too fast nor too slow. Remember to close your eyes and clearly say 3 times: 'May ancestors bless me with peace and smoothness' (blessing group) / 'Thank you ancestors for giving me life' (gratitude group) / Simply stand quietly with eyes closed for 15 seconds (no expression group)." After participants completed the ritual actions themselves, they completed assessments of emotions and perceived control.

In the no-action condition, participants viewed the neutral image presentation for 10-11 minutes. Afterward, the blessing group received instructions: "Ancestor worship rituals are meant to seek blessings from ancestors. Everyone has their own ancestors. Please say a phrase seeking blessings to your ancestors, clearly repeating it three times: 'May ancestors bless me with peace and smoothness.' " The gratitude group received instructions: "Ancestor worship rituals are meant to express gratitude to ancestors. Everyone has their own ancestors. Please say a phrase expressing gratitude to your ancestors, clearly repeating it three times: 'Thank you ancestors for giving me life.' " The no expression group viewed a blank screen for 3 seconds. Participants then completed emotion and perceived control assessments.

The image presentation time in the no-action condition matched the ritual demonstration video duration in the ritual action condition, both lasting 10-11 minutes. After completing one experimental condition, participants performed a 30-minute paper-folding task in another classroom before proceeding to the next condition. While one participant engaged in paper-folding, another participant underwent the experiment. Because ritual action was a within-subjects variable, we used an "ABBA" method to counterbalance order effects. Experimental conditions and sequences are shown in Figure 2 [Figure 2: see original paper].

3.5 Results and Analysis

Figure 2 Flowchart of Experiment 2

We conducted Harman' s single-factor test to examine common method bias. Exploratory factor analysis extracted factors with eigenvalues greater than 1, and the first factor explained less than 40% of the variance, indicating no serious common method bias.

3.5.1 Participants' Positive Emotions and Perceived Control Participants' positive emotion and perceived control scores under different conditions are presented in Table 2 .

Table 2 Mean Scores of Participants' Positive Emotions and Perceived Control

A mixed-design repeated measures ANOVA with perceived control as the dependent variable revealed a significant main effect of ritual action, $F(1, 93) = 4.20$, $p = 0.043$, $p^2 = 0.04$. Perceived control scores in the ritual action condition ($M = 12.63$) were significantly higher than in the no-action condition ($M = 12.18$). The main effect of symbolic meaning was not significant, $F(2, 93) = 2.92$, $p = 0.059$. The interaction between ritual action and symbolic meaning on perceived control was not significant, $F(2, 93) = 0.25$, $p = 0.779$.

A mixed-design ANOVA with positive emotions as the dependent variable showed a significant main effect of ritual action, $F(1, 93) = 4.34$, $p = 0.04$, $p^2 = 0.05$. The main effect of symbolic meaning was significant, $F(2, 93) = 12.07$, $p < 0.001$, $p^2 = 0.21$. Post-hoc tests indicated that regardless of whether ritual actions were performed, the blessing group' s positive emotion scores were significantly higher than both the gratitude group ($p = 0.001$) and the no-meaning group ($p < 0.001$). No other between-group differences were significant ($ps > 0.05$). See Figure 3 [Figure 3: see original paper]. The interaction between ritual action and symbolic meaning was not significant, $F(2, 93) = 0.26$, $p = 0.771$.

Figure 3 Results of ANOVA on the Effects of Ritual Action and Symbolic Meaning on Positive Emotions

3.5.2 The Mediating Role of Positive Emotions We created dummy variables for the different symbolic meaning manipulations (gratitude group, blessing group, no-meaning group) with two levels coded separately. Using the PROCESS macro (Hayes, 2013) with Model 4 and 5,000 bootstrap samples, we assessed the mediating role of positive emotions. Results showed that in the ritual action condition, neither the direct effect of symbolic meaning nor the indirect effect through positive emotions was significant for either expressing gratitude or seeking blessings, with 95% confidence intervals containing zero. In the no-action condition, when expressing gratitude, neither the direct effect nor the indirect effect through positive emotions was significant, with 95% confidence intervals containing zero. However, when expressing blessings without ritual action, the mediating effect of positive emotions was significant, with an indirect effect size of 0.28, 95% CI [0.11, 1.30] not containing zero, accounting for 62.90% of the total effect. The direct effect of seeking blessings on perceived control was not significant, 95% CI [-0.61, 1.35] containing zero. See Figure 4 [Figure 4: see original paper].

Figure 4 Mediation Model of Blessing Symbolic Meaning Affecting Perceived Control Through Positive Emotions in the No-Action Condition
(Note: $\mathbf{p < 0.01}$, *$p < 0.001$)

3.6 Discussion

Novel ritual actions directly enhanced perceived control among Pumi adolescents, consistent with previous research (Hobson et al., 2017; Norton & Gino,

2014; Tian et al., 2018). In the no-action condition, the symbolic meaning of seeking blessings indirectly enhanced Pumi adolescents' perceived control through increased positive emotions. This occurred because when performing novel actions, participants needed to focus attention on accurately executing segmented action units (Hobson et al., 2018), reducing their perception of the symbolic meaning of seeking blessings. Expressing gratitude to ancestors did not enhance perceived control, nor did it show a mediating effect of positive emotions, possibly due to differences in the ease of activating the two types of symbolic meanings.

4 Experiment 3: Examining Ritual Effects on Perceived Control Among Pumi Adults Using a Recall Task

In real life, Pumi adolescents are merely observers of Guozhuang worship rituals, following elders' requests to seek blessings from ancestral gods, while senior family members are the ritual performers. Differences in ritual participants' experiences may influence rituals' effects on perceived control. Therefore, Experiment 3 selected adults to further explore the roles of ritual actions, symbolic meanings, and positive emotions on perceived control.

4.1 Participants

Seventy Pumi adults from Ninglang Yi Autonomous County participated in Experiment 3. Three participants withdrew during the experiment, leaving a final sample of 67 participants (22 men and 45 women) with a mean age of 42.78 $\pm$ 13.38 years.

4.2 Design

We activated Pumi adults' Guozhuang worship experiences through a recall task. Participants were asked to recall and describe: (1) what they did during Guozhuang worship, (2) what they said, and (3) what they felt. Their descriptions were then recorded.

4.3 Materials

(1) Demographic Information: Participants' age, gender, and other demographic data, as well as the number of ancestral generations they could recite during Guozhuang worship.

(2) Perceived Control Scale (α = 0.69) and Positive Emotions Questionnaire (α = 0.63): Both questionnaires were identical to those used in Experiment 2.

(3) Gratitude Questionnaire: We adapted five items from the Appreciation Scale (AS) developed by Adler and Fagley (2005): "When worshipping Guozhuang, I feel grateful for the blessings bestowed by ancestors" ; "I express

gratitude to my ancestors at least once daily" ; "I worship Guozhuang to remind myself to be grateful to ancestors" ; "I use Guozhuang worship to express my gratitude to ancestors" ; "I think it is important to constantly remind myself to be grateful to ancestors." The scale' s reliability coefficient was $\alpha = 0.75$. Items were rated on a 5-point scale from "1 = completely disagree" to "5 = completely agree," with higher total scores indicating greater gratitude.

(4) Blessing Questionnaire: We adapted five items from the Contingencies of Self-Worth Scale (CSWS; Zeigler-Hill, 2006) regarding God's love to fit ancestral blessings: "Worshipping ancestors can bless my family to be more harmonious, safe, and prosperous" ; "Worshipping ancestors can make me more confident in my conduct" ; "I feel I would lose ancestral protection if I did not perform ancestor worship rituals" ; "Worshipping ancestors will bring good rewards" ; "If I do not worship ancestors, I would feel isolated and helpless." The scale' s reliability coefficient was $\alpha = 0.78$. Items were rated on a 5-point scale from "1 = completely disagree" to "5 = completely agree," with higher total scores indicating greater perceived blessings.

4.4 Procedure

Participants first received instructions: "Respected grandfathers/grandmothers/uncles/aunts: Hello! During daily meals, the Wuxi Festival, the Spring Festival, and other major holidays, as well as during engagements/weddings and when guests arrive, Pumi people always perform the Guozhuang worship ritual, first honoring the gods of heaven and earth, then worshipping ancestors. Please describe what your family members and you did, what was said, and what you felt based on your participation in or observation of ancestor worship." Participants' descriptions were recorded.

After describing their Guozhuang worship experiences, participants completed demographic information, reported the number of ancestral generations they could recite, and finished the Perceived Control Questionnaire, Positive Emotions Questionnaire, Gratitude Questionnaire, and Blessing Questionnaire.

4.5 Results and Analysis

We conducted Harman' s single-factor test to examine common method bias. Exploratory factor analysis extracted five factors with eigenvalues greater than 1, with the largest factor explaining 31.43% of variance (less than 40%), indicating no serious common method bias.

Among the Pumi adults surveyed, 55 participants (82.1%) worshipped Guozhuang during all three daily meals, 9 participants (13.5%) worshipped Guozhuang during one or two meals daily, and 3 participants (4.5%) worshipped Guozhuang once annually. Thirty-seven participants (55.2%) could recite 0-3 generations of ancestors' names, 23 participants (34.33%) could recite 4-9 generations, and 7 participants (10.45%) could recite more than 10 generations. All 67 participants reported both seeking blessings and expressing gratitude

during Guozhuang worship. All 67 participants performed basic ritual actions such as placing offerings and lighting incense, but the number of ancestral names each person recited during Guozhuang worship varied. For Pumi adults, reciting ancestral names is a core element of Guozhuang worship. Reciting more ancestral names requires greater time investment in memorizing them. When performing rituals, those who accurately recite multiple generations of ancestors' names spend more time than those who generally address ancestors. Therefore, the number of ancestral generations recited by Pumi adults reflects the degree or level of ritual action performance. Descriptive statistics and correlations among variables are presented in Table 3 .

Table 3 Descriptive Statistics and Correlation Analysis of Variables

Pearson correlation analysis indicated that perceived control scores were significantly correlated with positive emotions ($r = 0.24$, $p = 0.047$) and number of generations recited ($r = 0.32$, $p = 0.009$), but not significantly correlated with age, family size, number of languages used, or degree of expressing gratitude and seeking blessings ($ps > 0.05$). Both types of symbolic meaning—expressing gratitude and seeking blessings—were significantly correlated with positive emotions (gratitude: $r = 0.48$, $p < 0.001$; blessing: $r = 0.25$, $p = 0.040$). Independent samples t-tests and one-way ANOVA showed no significant differences in perceived control scores across gender, religious belief, education level, or ancestor worship frequency ($ps > 0.05$). Variables significantly correlated with perceived control scores were entered into a regression equation. Regression analysis revealed that the number of generations recited significantly predicted perceived control levels (see Table 4).

Table 4 Regression Analysis Results of Predictors of Perceived Control ($N = 67$)

To examine the relationships among number of generations recited, symbolic meanings, positive emotions, and perceived control, we first built an observed variable model with the two symbolic meanings as independent variables, perceived control as the dependent variable, and positive emotions as the mediator. Using AMOS 24.0 with bias-corrected nonparametric percentile bootstrap method (5,000 samples), we tested path coefficients and indirect effects (Model 1). Second, we eliminated nonsignificant paths and variable relationships and retested path coefficients and indirect effects (Model 2). Finally, we added the new variable from Experiment 3—number of generations recited—to the model and retested path coefficients and indirect effects to examine model changes after its inclusion (Model 3, presenting only significant paths). Results indicated that in all models, the mediating effect of positive emotions between expressing gratitude and perceived control was significant. Model 3 showed that number of generations recited directly affected perceived control, and when simultaneously considering relationships among number of generations recited, gratitude, positive emotions, and perceived control, the indirect effect of gratitude on perceived control was somewhat weakened. Number of generations recited directly affected perceived control independently of the "gratitude → positive emotions

→ perceived control" pathway (the interaction term was not significant). Path coefficients for each model are presented in Table 5 .

Table 5 Path Coefficients and Indirect Effect Tests

Experiment 3 demonstrated that among Pumi adults, the ritual action of reciting ancestral names during Guozhuang worship was related to perceived control, with those reciting more ancestral generations reporting higher perceived control. The two symbolic meanings of Guozhuang worship—expressing gratitude and seeking blessings—were not significantly correlated with perceived control, corresponding to the nonsignificant main effect of symbolic meaning on perceived control in Experiment 2. Thus, whether at the behavioral or correlational level, the symbolic meanings of Guozhuang worship showed no direct relationship with perceived control. However, when adults expressed gratitude to ancestors during Guozhuang worship, it affected perceived control through the full mediation of positive emotions. This differs from Experiment 2' s finding that Pumi adolescents' perceived control was enhanced through positive emotions only when seeking ancestral blessings, suggesting that differences in ritual participants and experience cause the two symbolic meanings to have different effects on perceived control across the two age groups. Pumi adults can better understand and experience the meaning of expressing gratitude to ancestors in Guozhuang worship compared to adolescents.

5 General Discussion

5.1 Ritual Actions Directly Enhance Perceived Control

Rituals represent one means of acquiring and enhancing perceived control (Legare & Souza, 2014; Norton & Gino, 2014; Tian et al., 2018). The number of repetitions and steps in ritual actions are primary factors influencing ritual efficacy (Hobson et al., 2016; Legare & Souza, 2012). Three experiments from different perspectives demonstrated that both conventional cultural ritual actions and novel ritual actions with cultural symbolic meanings can enhance perceived control among Pumi people, revealing that traditional conventional rituals still contain value in activating danger defense systems. Evolutionary precautionary systems theory posits that when facing various environmental dangers, taking action is always better than taking no action. Even repetitive, redundant, and rigid behaviors make people feel useful. In evolution, ritualized behavior has been preserved as a danger defense system to help people adapt to dangers and stress in society and the environment (Boyer & Liénard, 2006). Therefore, when people perform ritual actions, they instinctively activate danger defense systems, ensuring danger is eliminated and thereby gaining perceived control.

According to social identity theory, when people perceive themselves as belonging to a group, they gain social support experiences from feeling supported and respected, which strengthens perceived control (Greenaway et al., 2015). If people perceive they have sufficient social relationships and resources, they are

more likely to obtain material and spiritual support from others when facing challenges and crises, generating stronger perceived control and psychological resources to overcome adversity (Chun & Lee, 2017). Rituals play an important role in enhancing perceived control and promoting mental health. The repeated offering of tributes and recitation of ancestral names evoke family identity and social support experiences, stimulating emotions of being together with ancestors. This represents another reason why ritual actions enhance perceived control among Pumi people.

5.2 Symbolic Meanings Indirectly Influence Perceived Control by Increasing Positive Emotions

Brooks et al. (2016) noted that ritual symbolic meanings determine rituals' emotional impact. Experiments 2 and 3 demonstrated that symbolic meanings, rather than ritual actions, enhanced positive emotions, which in turn influenced perceived control. The positivity and sacredness embedded in symbolic meanings are important reasons why they increase positive emotions. Ritual symbolic meanings enable people to experience belonging to a larger category such as a group or belief system, and perceiving this meaning provides positive emotional experiences (Hobson et al., 2018). This sacralization can form connections with transcendent entities and enhance well-being (Piedmont, 1999). Therefore, when Pumi people seek ancestral blessings or express gratitude to ancestors, they experience connection with their ancestors and believe ancestral gods are protecting and supporting them. This confidence enables more positive optimism. This does not mean people believe everything depends on ancestral blessings, but rather expresses their hope for a better future.

However, compared to adults, adolescents are not yet fully developed physically and mentally and are economically dependent, making them objects in need of care and protection. Therefore, in Experiment 1, Pumi adolescents more frequently described the symbolic meaning of seeking blessings. In Experiment 2, Pumi adolescents could increase positive emotions and enhance perceived control simply by seeking blessings without performing ritual actions. These results reflect that adolescents experience the symbolic meaning of seeking blessings more prominently in Guozhuang worship. Seeking ancestral blessings represents emotional expression, providing more emotional comfort than direct enhancement of perceived control. Similarly, the expression of gratitude brings positive emotional experiences (Lin, 2019). Experiment 3 showed that expressing gratitude to ancestors was the symbolic meaning that Pumi adults experienced more in Guozhuang worship. Expressing gratitude to ancestors increased positive emotions among Pumi adults, which enhanced perceived control, consistent with previous research on emotions influencing perceived control (Ruiz-Aranda et al., 2012). Thus, different age groups differ in their participation methods and degrees in rituals and have different life experiences, resulting in differences in their ritual experiences.

5.3 Dual-Pathway Mechanism: Ritual Actions and Symbolic Meanings Independently Influence Perceived Control

This study found no interaction between ritual actions and symbolic meanings on perceived control, indicating that the two elements of rituals independently influence perceived control enhancement, thus constituting a dual-pathway mechanism. This partially confirms Hobson et al.' s (2018) proposal that rituals involve two levels of psychological processes: the physical characteristics of rituals (ritual actions) and the psychological characteristics (symbolic meanings/rules) lead to bottom-up and top-down processing, respectively (Nielbo & Sørensen, 2011). In this study, ritual actions were processed bottom-up as highly patterned action sequences requiring participants to parse them into segmented action units when performing rituals. Performing ritual actions conveyed an internal sense of self-control (Tian et al., 2018), directly enhancing perceived control, though this cognitive resource consumption might affect positive emotion generation. Symbolic meaning expression represents top-down processing, making people feel connected to ancestors, family traditions, and culture, bringing emotions of awe, sacredness, and gratitude (Hobson et al., 2018), and enhancing perceived control by expanding meaning and increasing positive emotions.

5.4 Innovations and Applied Value of This Study

This study offers three theoretical innovations: (1) Previous studies (e.g., Brooks et al., 2016; Norton & Gino, 2014; Tian et al., 2018) have not emphasized separating ritual actions, symbolic meanings, and emotions. By decomposing rituals into ritual actions, symbolic meanings, and ritual-induced positive emotions, this study identified different roles of ritual actions and symbolic meanings in enhancing perceived control, deepening ritual psychological research. (2) This study found that different types of symbolic meanings in rituals have different effects on perceived control across age groups, contributing new knowledge to explaining how rituals influence perceived control. (3) By extracting core elements of Guozhuang worship to create a novel ritual and using experimental methods to examine rituals' influence on perceived control, this study represents a significant methodological breakthrough compared to previous cultural ritual research using field investigations or phenomenological analysis.

The results also have clear applied value. In the process of modernization, facing challenges of cultural and environmental changes, fully exploring the psychological significance of rituals in ethnic cultures and creatively inheriting traditional cultural ritual actions and symbolic meanings in new socio-ecological contexts to experience the pleasant emotions and sufficient perceived control brought by rituals can help people cope with various difficulties and challenges in real social life. This study' s results indicate that ritual actions and symbolic meanings enhance perceived control through different pathways, and that ritual action performance and symbolic meaning expression also differ between adolescents and adults within the same ethnic group. When inheriting and innovating cul-

tural rituals, we must guard against tendencies to oversimplify or neglect ritual actions, while also avoiding emphasis on or design of only one symbolic meaning, as this would fail to meet the needs of different groups.

All ethnic groups in China have ancestor worship folk customs, including various conventional rituals. The educational function of folk customs is realized through daily life cycles and repetitions. By continuously narrating "ancestors," rituals provide families, ethnic groups, and nations with intergenerational memories and identities, enabling individuals to confirm their origins, values, and responsibilities (Long, 2019). This study shows that participating in Guozhuang worship enhances perceived control among Pumi adolescents. Guozhuang worship may also have important influences on adolescents' self-concept, values, and group identity. Different age groups differ in ritual actions and symbolic meanings during Guozhuang worship. If these differences result from ritual rules themselves, what value and significance do such intergenerational ritual rules have for individual and ethnic group development? These questions warrant further research. Although Experiment 2 attempted to separate ritual actions from symbolic meanings, it may have inadvertently introduced an "action" component by having participants repeat symbolic meanings three times. Individuals also have a tendency to assign meaning to behaviors, and the no-meaning expression control group might have spontaneously activated symbolic meanings. Future research needs to examine whether the manipulation of symbolic meanings was effective. Finally, this study did not examine participants' identification with Guozhuang worship or the novel ritual, which might influence rituals' effects on perceived control. Future research should address these issues.

6 Conclusion

Ritual actions and symbolic meanings independently influence perceived control through a dual-pathway mechanism: ritual actions directly enhance perceived control, while symbolic meanings indirectly enhance perceived control through positive emotions. The influence of symbolic meanings on perceived control differs by ritual participants' experience: adolescents primarily seek blessings, while adults primarily express gratitude.

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Note: Figure translations are in progress. See original paper for figures.