Cultural differences in dream emotions between Japanese and Chinese college students

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Summary. The present study aimed to examine differences in dream emotions between Japanese and Chinese. 206 Japanese college students and 248 Chinese college students completed questionnaires such as parts of the Manheim Dream Questionnaire (MADRE) (Schredl et al., 2014) , descriptions of recent impressive dreams, and subjective dream emotional ratings of 8 emotions. Dream descriptions were analyzed using a developed version of the Structural Dream Analysis (Roesler, 2018b). The results showed that there are statistically significant differences in the dream emotions experienced by Japanese and Chinese college students. Chinese college students experienced more positive emotions such as joy/happiness, contentment, and love, and more anger in their dreams than Japanese college students. Japanese college students experienced more negative emotions such as anxiety/fear and confusion/shock than their Chinese college students. These differences were interpreted as reflecting cultural characteristics such as interpersonal relationships and emotional expressions unique to the country. The results of this study would support the continuity hypothesis of dreams.

Keywords: Dream emotion, cultural differences, continuity hypothesis, Japanese, Chinese

1. Introduction

Dream Emotions and the Continuity Hypothesis

The topic of emotions in dreams has been of interest to dream researchers. Hall and Van de Castle's (1966) seminal study utilized a content analysis system to scrutinize emotions in 1000 dream reports, finding that only 20% of the dream emotions were positive. Subsequent research by Kramer, Winget, and Whitman (1971) found that dreams were predominantly negative in tone, with 54% of the dreams being negative, 26% positive, and 20% neutral. Thus, early studies, dreams were thought to be dominated by negative emotions. This bias toward negative emotions is called the negative dream bias, and various theories have been considered to explain this phenomenon. Among these theories, Revonsuo's (2000) threat simulation theory (TST) stands out as one of the most renowned. TST posits that dreams serve as simulations of the threats we encounter in our waking life, leading to negative emotions being more prevalent.

However, some studies have pointed out that the phenomenon of dreams being biased toward negative emotions is simply caused by differences in rating methods. Schredl and Doll (1998) conducted a comparative analysis of self and objective ratings of dream emotion strength and found that, while negative emotions tended to outweigh positive emotions in objective ratings, the ratios were balanced in self-ratings. This finding suggests that, in the dreamer's own assessment, the ratio of positive and negative dream emotions is even handed, while negative emotions may be overrepresented when objective ratings are utilized.

Despite differences in rating methods, prior studies have suggested a relationship between dreamer characteristics and emotions experienced during dreams. One prominent theoretical perspective is the continuity hypothesis (Hall & Nordby, 1972), which posits that dreams are guided by the dominant emotions and central emotional concerns of the dreamer. Empirical support for the continuity hypothesis has been demonstrated by various studies, including Hartmann, Zborowski and Kunzendorf (2001), who found that dreams reflect the emotional preoccupations of waking life. In addition, Cartwright, Agargun, Kirkby, and Friedman (2006) also showed that dreams are influenced by emotional concerns during waking.

Several studies support the continuity hypothesis. Gilchrist, Davidson and Shakespeare (2007) found a correlation between personality traits and the tendency to experience positive or negative emotions in dreams, furthermore, the addition of waking emotions to personality traits increased the predictability of dream emotions. Suzuki and Matsuda (2012) suggested that negative personality factors influence negative dreams. Other researchers have suggested that higher trait anxiety predicts dream emotions (Samson, Julien, Beaulieu, & Zadra, 2019) and that nightmare recall frequency is associated with lower happiness (Zadra & Donderi, 2000). These findings suggest that dream emotions may be reflective of the dreamer's personality, daily emotional experiences, and emotional concerns.

Cultural Differences in Dream Content

Research on cultural differences in dream content has been conducted extensively. Griffith, Miyagi, and Tago (1958) distributed a list of 34 typical dreams to 473 Japanese and American college students and surveyed the themes they had experienced in their dreams. The results showed that dreams of being attacked or chased and dreams of fall-

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ing were commonly experienced in both cultures. However, there were differences in the dream experience rates between Japanese and Americans for 14 dream themes. Specifically, the seven dream themes that Japanese experienced more than Americans were: being attacked or pursued, trying again and again to do something, school, teachers, studying, being frozen with fright, fire, flying or soaring through the air, and wild, violent beasts. The seven themes in which Americans exceeded the Japanese were: arriving too late, being locked up, loved person to be dead, finding money, being inappropriately dressed, being nude, and lunatics or insane people. Some of these differences can be explained in cultural terms. For example, the dream of being naked, which was less common among Japanese and more common among Americans, is explained by the fact that Japanese kimonos are made to hide the contours of the body, whereas Western clothes are made to shape and fit the body. From another perspective, the appeal of "beauty" seems to be the form and kinetic potential of the human body, which goes back to Greek antiquity in the West but is absent in Japanese art. Such cultural differences, as manifested in dress and art, are thought to be reflected in dream themes: in the dream of fire, the Japanese dreamed more than the Americans. This may be due to the fact that fire tends to be more omnipresent in Japan than in the US, possibly because of the perception of its danger. Thus, there are common dream themes that can be found in different cultures, but there are differences in the dreams that tend to be experienced depending on the background of the dreamer.

Yamanaka, Morita, and Matsumoto (1982) conducted an experiment using the rapid eye movement (REM) sleep period technique with 39 Japanese college students aged 19 to 21 years. The 297 reported dreams were coded using content analysis(Hall & Van de Castle, 1966), revealing that characters and food appeared more frequently in Japanese students than in American students. In Germany, Schredl, Ciric, Bishop, Gölitz, and Buschtöns (2003) compared 537 dreams collected from 39 male and 106 female German college students through a 2-week dream diary with the results of Hall& Van de Castle (1966). There was little difference between the German and American results, but German women dreamed of men more often than American women, and German men dreamed of men less often than American men. The author suggests that the gender differences in dream content between American and German students are due to differences in the frequency of stable partnerships between the two groups. Therefore, this difference is not so much cultural as it supports the idea of a continuum between waking and dreaming. Both continuity with waking life and cultural differences may account for differences in dream content between countries and cultures.

In Iran, Mazandarani, Aguilar, and Domhoff (2013) collected 218 dreams from 115 male and 103 female Tehran college students using the Most Recent Dream method and conducted a content analysis (Hall& Van de Castle 1966). Compared to the results of American college students, while there were high similarities, but differences were also found. For example, compared to the American students, a higher percentage of the dreams featured known persons such as family members. This result is thought to reflect the difference in self-formation between the West and the East. This tendency for acquaintances and familiar people to appear is also found in India (Grey & Kalsched, 1971) and Japan (Yamanaka et al., 1982), and is considered to reflect the tendency in Eastern cultures to promote an interdependent, group-embedded self. Iranian culture is also collectivistic, and this difference is thought to be due to the formation of a more interdependent self than in America.

Cultural Differences in Dream Emotions

One factor that influences dream emotions is cultural differences. Several previous studies also exist on cultural differences in dream emotions. Mazandarani et al. (2013) conducted an analysis of reported dreams, revealing a smaller prevalence of negative emotions among Iranian male college students in comparison to their American counterparts. The authors interpret this difference as caused by cultural differences in parental expectations regarding their children's emotional experiences and expressions. Specifically, the cultural factor is that Iranian parents strongly desire their children to be fearless and strongly expect their children to suppress aggression.

In China, Yu has conducted a series of studies on the Chinese population. Yu (2007) collected Most Recent Dreams using the dream diary method and obtained ratings of 15 emotions. The results showed that the ratio of positive emotion: negative emotion: neutral emotion = 1:1.05:0.51, with Interest (62.7%) and Exhilaration (58.7%) being the most common emotions in the dreams. Yu (2008) conducted a survey using the Dream Intensity Inventory and found that about half of the participants reported experiencing negative and positive emotions with similar frequency, and Yu (2010) had similar results. Based on the results of these prior studies, Hsu& Yu (2016) used content analysis to code 252 dreams recalled by 286 Chinese, assuming that Chinese dreams are predominantly more positive in content and emotion compared to other cultures. However, the results showed that negative dream emotions predominated even among the Chinese. The results are discussed from two perspectives: first, methodological issues in analysing the content, and second, personality traits of the Chinese. First, the problem with analysed the content is that only emotions explicitly mentioned in the dream report are scored, and the emotions experienced by the dreamer cannot be evaluated. Thus, positive emotions are easily overlooked especially in objective rating. Second, in Chinese culture, which is more collectivist than Western culture, emotional expression is controlled as a means of minimizing assertiveness and avoiding drawing attention to oneself, and actual emotional expression is more restrained than in the West. As a result, the expression of positive emotions in Chinese people is more subtle than in the West, and it is considered that positive emotions are more difficult to be rated by a third party. As a result, dreams are more likely to be biased toward negative ones.

Most of the studies that have examined cultural differences in dream emotions have used methods of content analysis (Hall & Van de Castle, 1966). However, since only objective ratings by third parties are used in this method, it is not possible to properly evaluate the positive emotions of dreams, as pointed out by Schredl &Doll (1998). Therefore, the dreamer's own subjective ratings should be used to correctly evaluate the emotions.

Cultural and Psychological Differences between Japan and China

Our study will attempt to investigate the differences in subjective emotions in dreams reported by both Japanese and Chinese people. So far, many researches on cultural differences in dreams have focused on differences between the East and the West. However, since there are various psychological differences between the people of China and Japan, it is expected that there are also differences in dream emotions. Takata (1998) showed that Chinese people have a significantly higher independent view of self than Japanese people through survey research. The cultural view of self is "an assumption about the self that is historically shared in a given culture" (Kitayama, 1994). According to Markus & Kitayama (1991), there are two types of construal of the self : independent view of self, in which the self is separate and independent from others, and interdependent view of self, in which the self is connected to others. The former is common in the West, while the latter is common in the East. However, according to Takata (1998), there are differences between China and Japan, with the Chinese tending to perceive the self as something separate from others. Thus, while both China and Japan have collectivist cultures on a global scale, China is more independent as an individual and Japan is more connected to others.

In regard to emotions, Chinese culture emphasizes emotional restraint and control (Tsai, Knutson, & Fung, 1997). On the other hand, Fang (2009) pointed out that Chinese culture has the idea that anger makes people learn about each other and deepen their relationship. According to Hifumi (2010) also found that Japanese people are concerned about others' evaluations and thoughts, whereas Chinese people confidently and openly say what they think is right and express it clearly. In addition, Chinese youths showed exaggeration, while Japanese youths were highly evaluative and hypersensitive (Zhang & Miyashita, 2013). From the above, it seems that Japanese people in particular tend to be concerned about what others think of them and have difficulty in expressing their emotions.

Structural Dream Analysis

In this study, a developed version of Structural Dream Analysis; SDA (Roesler, 2018a, 2018b) is used to analyses dreams from a structural perspective. SDA analyses a series of psychotherapy dream reports using analytical methods developed from narrative research (Roesler, 2018a). In a study of 202 dreams in 15 psychotherapy cases using this SDA, five typical patterns were found (such as Pattern1: No dream ego present, Pattern2: The dream ego is threatened, Pattern3: The dream ego is confronted with a performance requirement, Pattern4: Mobility dream, Pattern5: Social interaction dream), depending on the degree of strength of the dreamer's ego (Roesler, 2018b). Roesler (2018b) suggests a method of examining the number of occurrences of these five patterns as a developed version of Structural Dreams Analysis. Roesler (2018b) found that the state of the dream ego represents the dreamer's ego capacity, and that when psychological interventions improve the dream structure also changes from patterns 1 and 2 to 3 and eventually 4 and 5. Therefore, the nature of the dream ego reflects the strength or maturity of the dreamer's ego. For example, dreams with patterns 1 and 2 represent a low level of ego strength, and the change to dreams with patterns 4 and 5 is considered as the result of a growth in ego strength. This method can analyse short dreams reported in the survey, enabling us to examine the relationship between the dream ego and the way it interacts with others, and the emotions experienced in dreams. The emergence of dream emotions is thought to be related to the interaction between the dream self and the object present in the dream. For example, if a threatening object is chasing the dreamer, negative emotions such as fear are expected to arise. The developed version of structural analysis of dreams (Roesler, 2018b) categorises dreams based on the relationship between the dream ego and the object, which can help to identify the underlying factors that contribute to variations in dream emotions. Therefore, the use of structural analysis may be beneficial in understanding the factors responsible for differences in dream emotions. Furthermore, since the dream structure represents the strength of the dreamer's ego, it is possible to clarify the differences in ego and the accompanying differences in dream emotion between Japan and China, as mentioned by Takata (1998), and to further the discussion.

Aims

According to the dream continuity hypothesis, emotions and emotional concerns during waking life are believed to carry over into dream experiences, and dream emotions may be influenced by cultural differences. Despite Japan and China being in the same Asian region, there may be variations in psychological characteristics due to their distinct cultural backgrounds. Thus, elucidating differences in dream emotions across cultures is relevant to comprehending dissimilarities in psychological traits and emotional expression between Japan and China. To date, no study has examined the differences in subjective feelings of dreams between Chinese and Japanese. Therefore, the purpose of the present study is to investigate how the subjective emotional ratings of reported dreams differ between Japanese and Chinese.

The hypotheses of the study are as follows: given the noted differences in psychological characteristics between Chinese and Japanese individuals, it is expected that there are also differences in dream emotions between the two cultures. Specifically, it was hypothesized that Chinese college students would experience more positive emotions in their dreams than Japanese college students. This hypothesis is based on prior research (Yu, 2007, 2008, 2010) which has shown that Chinese people's dreams tend to be more positive compared to other cultures.

2. Method

2.1. Participants and Procedure

2.1.1 Japan

231 students at Universities A and B in Japan participated in this study from August to November 2021. Google Forms was used for the survey. They were recruited through university lectures, student organizations, and university bulletin boards. The number of respondents was 231, of which data with missing data and those over 26 years old were deleted. Dream descriptions with no response or responses of "I don't remember" or "I don't know" were treated as missing data. The number of valid responses was 206, and the

mean age was 21.13 years old (SD=1.94); 94 were males and 112 were females.

2.1.2 China

431 students at Universities C and D in China participated in this study in November 2022. Microsoft Forms was used for the survey. They were recruited through university lectures. The number of respondents was 431, of which data with missing data and data older than 26 years were deleted. The criteria for data deletion were the same as in Japan, but more missing data were found in China than in Japan because more dream descriptions were unanswered. The number of valid responses was 248, with a mean age of 19.70 years old (SD=1.57); 69 were male and 179 were female.

2.1.3 Ethical considerations

This survey were approved by the Kyoto University Ethics Review Committee for Clinical Psychology Research. As ethical considerations, we explained initially that participation in the survey was voluntary, responses could be interrupted at any time by closing the browser, no disadvantages would result from nonparticipation or interruption of responses, and that individuals would not be identified. The survey was administered only to those who provided their consent.

2.2. Materials

2.2.1 Question about dreaming

A translation of a portion of the Manheim Dream Questionnaire (MADRE) (Schredl, Berres, Klingauf, Schellhaas, & Göritz, 2014) was used to measure various aspects of dreaming. Participants answered the question after the instruction, “These questions are designed to capture different aspects of dreaming. For the following questions, please select the ones that apply to you.” Responses to six of these items were requested; Dream recall frequency was measured on a 7-point Likert-type scale (0=*never*, 1=*less than once a month*, 2=*about once a month*, 3=*two or three times a month*, 4=*about once a week*, 5=*several times a week*, 6=*almost every morning*), Emotional intensity was measured on a 5-point Likert-type scale(0=*not strong at all intense*, 1=*not that intense*, 2=*somewhat intense*, 3=*quite intense,* 4=*very intense*), Overall emotional tone was measured on a 5-point Likert scale(-2=*very negative* , -1=*somewhat negative*, 0=*neutral*, +1=*somewhat positive*, +2=*very positive*), Telling dreams, Recording dreams, Daytime mood affected was measured on a 8-point Likert scale (0=*never*,

Table 1. Pattern of Dream Structure.

Pattern 1: No dream ego present
Pattern 2: The dream ego is threatened
a. the dream ego is dameged, e.g. severely wounded, or even killed. In some cases the killing has already happended and the dream ego is found as a dead body.
b. the threat to the dream ego comes from a force in nature, e.g. a natural disaster, earthquake, fire, flooding, storm etc.
c. the dream ego is threatened by (dangerous) animals.
d. the dream ego is threatened by human beings, e.g. criminals, murderers or "evil people", or human-like-figures, e.g. ghosts, shadows etc.
Pattern 3: The dream ego is confronted with a performance requirement
a. Examination in a school or university setting.
b. The dream ego is subject to an inspection by an officail person, e.g. a ticket inspection on the train where the right of the dream ego is questioned.
c. the dream ego has the task to find something (which was lost before), get something, produce something etc.
Pattern 4: Mobility dream
a. disorientation: the dream ego has no idea where to go, even where it is and there are no signs of direction etc.
b. the dream ego is locked up in a closed spece, imprisoned etc., and is looking for a way to get out.
c. the dream ego wants to move, travel etc. but has no means to do so, e.g. it misses the train
d. the dream ego attemps to move and has some means of transportation but cannot control the movement, e.g. it cannot steer a car
e. the dream ego is moving but the way is blocked or the means of transport breaks down or crashes and movement cannot be continued
f. the dream ego is moving, making use of some means of transportaion but it is going the wrong way, is in the wrong train or bus, or is not authorized to use it (e.g. has no ticket) and thereforec cannot continue the joueney
g. in the positive form, the dream ego succeeds in moving towards and reaching the desired destination.
Pattern 5: Social interaction dream
a. the dream ego wants to get into contact but is ignored by others
b. the dream ego is criticized, devalued or made ridiculous by others and feels shame
c. the dream ego is successful in creating the desired contact
d. a special case: the dream ego is aggressive towards ohers (even kills others) which expressed the will of the dream ego to be separated and autonomous.

1=*less than once a year*, 2=*about once a year*, 3=*about two to four times a year*, 4=*about once a month*, 5=*two to three times a month*, 6=*about once a week*, 7=*several times a week*).

2.2.2 Recent impressive dreams

The participants were asked to respond freely to questions about the theme of the dream, time of the dream, and content of the dream. After the instruction, "Please choose one of the most impressive dreams you have had recently (in the past few months)," They were asked to briefly describe the dream in a few words and to describe when they had the dream. Furthermore, they were asked to describe the dream content in detail with the instruction "Now describe the dream in as much detail as you can."

2.2.3 Dream emotional rating

Regarding the dreams described with reference to Gilchrist et al. (2007), the following instruction was given: "Following, what emotions experienced in the dreams you described, please choose the one that best applies to you in terms of the intensity of each emotion." Participants were asked to rate their emotions in four negative categories (anger, anxiety/fear, sadness, and confusion/shock) and four positive categories (joy/happiness, love, contentment, and interest/excitement) using an 8-point scale ranging from "not at all" to "intense" for the described recent impressive dream.

2.3. Data Analysis

The analyses were conducted about questions about dreaming and dream emotion ratings using SPSS Statistics 28.0.1 with a t test. For the dream emotion rating, scores were calculated for each emotion added with the sum of four positive emotions, sum of four negative emotions, and the sum of all emotions.

Dream descriptions were classified using a developed version of the Structural Dream Analysis (SDA; Roesler, 2018a, 2018b). In the developed version of structural analysis, dreams are classified into five categories, Pattern 1 to Pattern 5, and each pattern has a further subclassification (Table 1). Detailed dreams described were coded based on patterns, and the number of dreams in each pattern was compared using Fisher's exact test. The 25 randomly selected Chinese dream reports were coded by a second independent judge whose native language is Chinese in order to compute interrater reliability. The 21 randomly selected Japanese dream reports were similarly coded by a second independent judge whose native language was Japanese. Good interrater agreement was obtained for Chinese samples (κ=.72) and for Japanese samples (κ=.83).

3. Results

3.1. Differences in Dreaming between Japanese and Chinese College Students

The means, standard deviations, and t test results for the independent samples for the dreaming aspect are given in Table 2. The t test shows there are significant differences between Japan and China on Dream recall frequency (t=2.88, p=.00, Cohen's d=.27), Emotional intensity (t=6.07, p=.00, Cohen's d=.57), Overall emotional tone (t=9.25, p=.00, Cohen's d=.87), Telling dreams (t=4.65, p=.00, Cohen's d=.44), Recording dreams (t=2.29, p=.02, Cohen's d=.22). Thus, Japanese college students have a higher frequency of dream recall, intensity of dream emotion and their dream emotion is generally more negative than Chinese college students. Chinese college students talk about their dreams and record their dreams more frequently than Japanese college students.

3.2. Differences in Dream Emotions Ratings between Japanese and Chinese College Students

The means, standard deviations, and t test results for the independent samples for the dream emotion ratings are given in Table 3. The t test shows there are significant differences between Japan and China on dream emotions (t=3.01, p=.00, Cohen's d=.28), positive emotions (t=4.32, p=.00, Cohen's d=.41), joy/happiness (t=3.83, p=.00, Cohen's d=.36), contentment (t=3.52, p=.00, Cohen's d=.33), love (t=7.38, p=.00, Cohen's d=.69), anxiety/fear(t=2.97, p=.00, Cohen's d=.28), confusion/shock (t=2.31, p=.02, Cohen's d=.22), anger (t=2.02, p=.04, Cohen's d=.19).

Chinese college students experienced positive emotions, especially joy/happiness, contentment, and love, more strongly than Japanese college students, and anger more strongly among negative emotions. Japanese college students experienced negative emotions, especially anxiety/fear, and confusion/shock, more strongly than Chinese college students, but the ratio of positive to negative emotions itself is nearly balanced.

Table 2. Mean, Standard Deviation, and t test of Dreaming Aspect between Japan and China.

	Japan (n=206)		*China (n=248)*					
	M	*SD*	*M*	*SD*	*t*	*p*	*Cohen's d*	
Dream recall frequency	4.19	1.23	3.81	1.57				Japan>China
Emotional intensity	2.17	1.00	1.64	0.88	6.07	.00	.57	Japan>China
Overall emotional tone	-0.56	0.97	0.16	0.70	9.25	.00	.87	China>Japan
Telling dreams	3.29	1.76	4.14	2.07	4.65	.00	.44	China>Japan
Recording dreams	1.15	1.93	1.62	2.33	2.29	.02	.22	China>Japan
Dreams affecing daytime mood	2.10	1.74	2.06	2.16	.20	.84	.02	

Table 3. Mean, Standard Deviation, and t test of Dream Emotion Ratings between Japan and China.

	Japan (n=206)		*China (n=248)*					
	M	*SD*	*M*	*SD*	*t*	*p*	*Cohen's d*	
Positive emotions	14.82	7.95	17.96	7.50	4.32	.00	.41	China>Japan
Negative emotions	14.84	8.06	14.17	7.15	.95	.34	.09	
Joy/Happiness	3.64	2.58	4.48	2.12	3.83	.00	.36	China>Japan
Contentment	3.85	2.48	4.60	2.04	3.52	.00	.33	China>Japan
Love	2.88	2.21	4.42	2.21	7.38	.00	.69	China>Japan
Interest/Excitement	4.45	2.32	4.45	2.16	.02	.98	.00	
Anxiety/Fear	4.56	2.66	3.87	2.30	2.97	.00	.28	Japan>China
Confusion/Shock	4.45	2.53	3.87	2.09	2.31	.02	.22	Japan>China
Anger	2.41	1.99	3.87	1.94	2.02	.04	.19	China>Japan
Sadness	3.42	2.45	3.87	2.26	.62	.53	.06	

3.3. Differences in Dream Structures between Japanese and Chinese College Students

Fisher's exact test on dream structure revealed differences between Japan and China for 4 patterns; Pattern1 (p=.02), Pattern2 (p=.02), Pattern4 (p=.02), Pattern5 (p=.00) (see Table 4). In the subcategories, there were differences between two groups in Pattern 2-d (p=.01), Pattern 3-a (p=.02), and Pattern 5-c (p=.04) (see Table4). Japanese college students reported more dreams of Pattern 1, Pattern 2, Pattern 2-d, and Pattern 4 than did Chinese college students, and Chinese college students reported more dreams of Pattern 3-a, Pattern 5, and Pattern 5-c than did Japanese college students. Thus, Japanese college students often dream of dreams without a dream ego, dreams in which the dream ego is exposed to threats such as humans, and dreams of movement, while Chinese college students often dream of examinations and dreams in which the dream ego engages in desirable social interactions.
[insert Table 4here]

4. Discussion

The results of this study indicate that there are statistically significant differences in dream emotions experienced by Japanese and Chinese college students.

To begin with, Japanese college students had a higher frequency of dream recall, experienced stronger dream emotions, and their dreams tended to have a more negative tone in daily dreaming compared to Chinese college students. In contrast, Chinese college students reported discussing and recording their dreams more frequently than their Japanese counterparts. Several factors are known to be associated with dream recall frequency, including thinner boundaries (Hartmann, Elkin, & Garg, 1991), which has been linked to higher levels of openness in the Big Five personality traits (Schredl & Göritz, 2017; Schredl & Rauthmann, 2022), as well as greater sensitivity (Schredl, Blamo, Ehrenfeld, & Olivier, 2022). Taken together, these findings suggest that Japanese college students with higher dream recall frequency may possess psychological traits such as thinner boundaries, greater openness, and higher susceptibility compared to their Chinese counterparts. Moreover, it is possible that these psychological traits contribute to the observed tendency for Japanese people to experience stronger emotions in everyday dreaming. As Aron et al. (2012) have suggested, individuals who are more sensitive tend to be more emotionally reactive. Therefore, it is plausible that the greater emotional reactivity observed in Japanese individuals may contribute to their stronger experience of dream emotions. It is important to note, however, that this remains a speculative possibility, as no studies have yet investigated potential differences in these psychological traits between Japanese and Chinese individuals.

Chinese college students were observed to talk about and record their dreams more frequently than Japanese college students, suggesting that they are more actively engaged with their dreams. Three possible reasons for this difference are suggested. First, the presence of a partner (Olsen, Schredl, & Carlsson, 2013; Schredl, Braband, Gödde, Kreicker, & Göritz, 2019) and high intimacy (Olsen et al., 2013) are associated with higher dream sharing frequency. These findings suggest that people are more likely to share their dreams with an intimate partner. Chinese culture places a strong emphasis on intimacy and a norm of acceptance and total commitment to one's partner (Sonoda, 2001). In contrast, Japanese college students tend to demand courtesy even in close relationships, while Chinese college students do not. This may explain why Chinese students have stronger relationships with their close friends and are more likely to share their dreams with them. Furthermore, Japanese college students tend to avoid interpersonal contact nowadays and tend not to have deep relationships with their friends (Okada, 2016). Secondly, dream sharing is associated with extraversion (Schredl, Henley, & Blagrove, 2016; Schredl& Rauthmann, 2022). It is possible that Chinese individuals are more extraverted and therefore more likely to share their dreams with others. Finally, it is suggested that the novel coronavirus pandemic may have had an impact on Chinese students' dream behaviors. According to Cong, Xue, & Ye (2022), Chinese people had a more positive attitude toward dreams during the pandemic than before it. The data in this study was also collected during the pandemic and lockdown, and it is possible that Chinese college students were more conscious of their reflection, sleep, and self-care, leading to an increase in their active dream behaviors such as recording and sharing dreams. Despite the fact that the novel coronavirus was also present in Japan, university students there did not experience the same level

Table 4. Number of Dreams that Fit to Pattern between Japan and China.

	Japan (n=206)		*China (n=248)*		*p*	
Pattern1	12	5.82%	4	1.61%	.02	Japan>China
Pattern2	38	18.44%	26	10.89%	.02	Japan>China
Pattern2-a	2	0.97%	4	1.61%	.69	
Pattern2-b	5	2.42%	3	1.21%	.48	
Pattern2-c	4	1.94%	4	1.61%	1.00	
Pattern2-d	27	13.10%	15	6.05%	.01	Japan>China
Pattern3	41	19.90%	63	25.40%	.18	
Pattern3-a	9	4.36%	26	10.48%	.02	China>Japan
Pattern3-b	2	0.97%	2	0.81%	1.00	
Pattern3-c	30	14.56%	35	14.11%	.89	
Pattern4	34	16.50%	23	9.27%	.02	Japan>China
Pattern4-a	2	0.97%	1	0.40%	.59	
Pattern4-b	6	2.91%	4	1.61%	.52	
Pattern4-c	5	2.42%	1	0.40%	.10	
Pattern4-d	3	1.46%	1	0.40%	.33	
Pattern4-e	6	2.91%	2	0.81%	.15	
Pattern4-f	4	1.94%	1	0.40%	.18	
Pattern4-g	8	3.88%	6	2.42%	.42	
Pattern5	38	18.44%	82	27.02%	.00	China>Japan
Pattern5-a	1	0.49%	4	1.61%	.38	
Pattern5-b	9	4.37%	5	2.82%	.18	
Pattern5-c	21	10.19%	42	16.94%	.04	China>Japan
Pattern5-d	7	3.40%	8	3.23%	1.00	

of restrictions as their counterparts in China. It is important to note, however, that these are speculative explanations, and further research is needed to confirm or refute these possibilities.

Chinese college students reported experiencing emotions of joy/happiness, contentment, and love more strongly in their dreams compared to Japanese college students, according to the present study. These results are consistent with the findings of prior research (Yu, 2007; Yu, 2008; Yu, 2010) that Chinese people are more likely to experience positive emotions in dreams. These prior research studies were conducted using the dreamer's own subjective ratings. Thus, when subjective ratings of dream emotion were used, the present study also showed that Chinese people's dreams were dominated by positive emotions compared to other cultures. As for Japanese college students, simple comparisons are difficult because of the lack of prior research on Japanese subjects and more recent data. The resulting balanced ratio of positive to negative emotions is consistent with prior research using subjective ratings around the world (Schredl & Doll, 1998; Sikka, Valli, Virta, & Revonsuo, 2014), which suggests that the dreams of Japanese college students are not particularly negative. However, compared to China, Japanese college students experienced negative emotions such as anxiety/fear and confusion/shock more strongly in their dreams. The present study suggests that cultural differences between Japan and China may account for these observed differences in dream emotions.

Chinese college students rated joy/happiness, contentment, and love higher than Japanese college students, which are mildly positive emotions. These positive emotions may be explained by the high number of Pattern 5, especially Pattern 5-c, in the dream structure. Pattern 5-c is a dream structure that creates desirable contact with others. Chinese college students may experience stronger positive emotions, accompanied by more dreams of having friendly relationships with others. A possible explanation for this result might be the influence of interpersonal and emotional styles in Chinese culture. Chinese tend to emphasize emotional restraint to maintain interpersonal harmony (Chen, Cheung, Bond, & Leung, 2005) and to prefer calm and peaceful emotions with low arousal (Tsai et al., 2006). The positive emotions of joy/happiness, contentment, and love, which were significantly different in this study, are calm and favor harmony with others. This suggests that Chinese college students experienced similarly strong positive emotions in their dreams, which were calm and contributed to interpersonal harmony. Furthermore, in China, closeness to those with whom one has a relationship is strong, and there is a norm of acceptance and total devotion to the other (Sonoda, 2001). In this study, the emotion that was most characteristic of Chinese college students was love. Matsui, Nakasato, and Ishii (1998) found that the scores for altruism were higher in China than in Japan, with a particular emphasis on helping acquaintances. This is thought to be influenced by the Chinese tradition of taking care of one's relatives. The dream emotions may reflect the cultural characteristics of Chinese interpersonal relationships. In addition, from the perspective of structural analysis, Pattern 5, especially dreams that form desirable relationships on their own, corresponds to the dreamer's strong ego (Roesler, 2018b). As Takata (1998) pointed out, Chinese college students have stronger egos and more stable ego boundaries than their Japanese counterparts, which may make them more likely to have desirable relationships and experience positive emotions in their dreams.

The results of this study show that anger is the only negative emotion among Chinese college students that exceeds that of Japanese students, although the effect size is smaller. Both China and Japan tend to be collectivist, so they may express less anger than Westerners. As a basis for this, in China, according to Wei (2013), there is a significant positive association between emotional suppression and interpersonal harmony for Chinese individuals, but this association is not significant for European Americans. Additionally, Friedman's (2006) study found that Chinese individuals are more prone to conflict avoidance compared to Americans, which implies that they are also more likely to suppress their anger in comparison to Westerners. Thus, these findings suggest that Chinese individuals are more inclined towards emotional suppression compared to Westerners. In Japan, Japanese suppress the expression of anger toward others (Argyle, Henderson, Bond, Iizuka, & Contarello, 1986), and the display rule that Japanese should suppress the expression of anger toward others works (Kino, 2000). Thus, the Japanese, like the Chinese, will tend to suppress their anger more than their Western counterparts. However, comparing China and Japan, it is possible that the Chinese are more likely to express anger and the Japanese are more likely to suppress it. Zhao (2002) revealed that Chinese people express anger more strongly than Japanese people in public situations. According to Fang (2009), in Chinese culture, as in the phrase "不打不相识" (without fighting, people cannot understand each other and get along), it is believed that individuals need not worry about conflicts with others as long as they can comprehend each other's emotions and thoughts, which can ultimately lead to the development of friendships. It is also possible that expressing anger is particularly difficult for Japanese youth. Hatanaka (2020) points out from the results of a survey using the P-F study that young people in Japan tend to consciously suppress aggression more than adults. Thus, the tendency to repress and not express anger may be more pronounced among Japanese youth than among Japanese as a whole. These differences in attitudes toward anger in China and Japan may be related to the differences in anger emotions in dreams shown in this study.

In Japanese college students, anxiety/fear and confusion/shock were experienced more strongly than in Chinese college students. This result may be related to the large number of Pattern 2 dreams in which the dream ego is threatened in structure. Pattern 2 dreamers, according to Roesler (2018b), have a weak ego and are unable to face parts of their personality and emotions or control them. In Japan, "fragmented and multifaceted self" (Hirosawa, 2015) and a weak sense of self (Konakawa, 2020) have been pointed out, especially among young people. In fact, Takata (1998) compared Japanese and Chinese cultural views of the self and found that independence was significantly lower in Japanese than in Chinese. Japanese college students tend to have a weak individual ego, and thus are more likely to be threatened by the object in their dreams and experience anxiety/fear and confusion/shock. In addition, the present study's finding that Japanese college students often dream of being threatened by people in pattern 2-d may be explained by the fear of interacting with others (Okada, 1993) observed among Japanese youths. Prior research has shown that Japanese students tend to be more hypersensitive to others' involvement and evaluation than Chinese students (Hifumi, 2010; Zhang & Miyashita, 2013). This tendency to be concerned about what others think of them and their high level of interpersonal fear mentality may be related to their dreams of being threatened by others. However, Griffith et al. (1958), in their classic study of typical dreams, found that Japanese experienced dreams of being attacked or chased more frequently than Americans, suggesting that Japanese may be more likely to have dreams that evoke negative emotions that threaten their dream ego, regardless of the age or period.

The results of this study demonstrated differences in dream emotions using subjective evaluations between Japan and China. This difference may be explained by cultural differences. In this respect, the present study seems to support the dream continuity hypothesis (Hall& Nordby, 1972). The continuity hypothesis suggests that personal emotional concerns are reflected in dreams. The results of this study indicate that not only personal concerns but also culture-specific interpersonal styles and styles of emotional experience may be reflected in the emotional experience in dreams.

There are several limitations to this study. One of the limitations of this study was the use of the impressive dream measure. Since the dreamers selected dreams that were more memorable in terms of impressiveness, there may be a discrepancy between the dreamer's impression of the dream and the actual experience of the dream. In other words, some cognitive factors related to dream recall are thought to influence the recall of dreams and the rating of emotions. To meet this challenge, it is also useful to use the dream diary method. In addition, comparisons with prior research around the world using the most recent dream method have been difficult. The teaching methods need to be standardized with prior research to collect more comparable data. In addition, the survey did not obtain data on personality traits, daytime emotions, or stress in both cultures. With regard to the results of this study, for example, it is possible that Japanese college students are more likely to feel threat on a daily basis and, as a Threat Simulation Theory (Revonsuo, 2000), are more likely to feel threat in their dreams. In the future, it is desirable to obtain these data in order to verify the continuity with daytime. Furthermore, this study was not able to investigate more complex emotions because there were only four positive and four negative items on the dream emotion rating scale. It is hoped that more types of emotions that can be rated will be investigated in the future.

5. Conclusion

Japan and China have been regarded within the framework of the East, and the cultural differences in dream emotions have not been clarified. In this study, Chinese college students experienced more positive emotions such as joy/happiness, contentment, and love, and more anger in their dreams than Japanese college students. Japanese college students experienced more negative emotions such as anxiety/fear and confusion/shock than their Chinese college students. The results of this study showed that there were certain cultural differences in dream emotions between Japan and China using the method of rating emotions by the dreamers themselves. These differences were thought to reflect cultural characteristics of interpersonal relationships and emotional expression unique to the country. The results of this study would support the "continuity hypothesis" of dreams.

Conflict of Interest

The author declares no conflict of interest.

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