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CROSS CULTURAL COMPARISON OF EMOTION REGULATION IN JAPANESE AND AMERICAN 11-MONTH-OLD INFANTS

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Abstract

Emotion regulation of 11-month-old American and Japanese infants was compared. Infants' responses to several emotion eliciting conditions were observed in the laboratories. Results showed that Japanese infants behaved less autonomously and were more dependent on their mothers than the American infants, especially during and after stressful conditions. These differences were interpreted in relation with differences in early emotional socialization, parental beliefs and childrearing goals in Japanese and American societies.

Key Words : emotion regulation, lab observation, emotional socialization, parental beliefs, cross cultural comparison

It has been suggested that infants may develop emotion regulation through relational context with caregiver (e. g. Bridges & Grolnick, 1995 ; Cassidy, 1994 ; Demos, 1986 ; Kopp, 1989). Many literatures on infant-caregiver interactions in cross-cultural contexts have documented that there were wide ranges of qualitative differences. If qualitative aspects of infant-caregiver interactions influenced infants ' emotion regulation, we can expect that the emotion regulation would be influenced by culture. According to Campos and his coworkers (Campos, Campos & Barrett, 1989 ; Campos, Mumme, Kermonian & Campos, 1994 ; Saarni, Mumme & Campos, 1998), emotion regulation should be understood as relational in its nature. In their theoretical framework, culture is one of the important determinants of the nature of emotion regulation. However, there were few

studies on emotion regulation in cross-cultural contexts.

Campos and his coworkers have compared infants' emotion expressions between Asians (Japanese and Chinese) and European American (Camras, Oster, Campos, Campos, Ujiie, Miyake, Wang & Meng, 1998; Camras, Oster, Campos, Miyake & Bradshaw, 1992). However because they mainly compared facial expressions using BabyFACS, an anatomically based coding system, they did not find any evidence on cross-cultural differences of emotion regulation. In this report, infants' emotion regulations were compared between Japanese and European American sample.

Many researchers have done cross-cultural studies on infant-mother interaction between Japanese and American sample (e. g. Caudille & Weinstein, 1969; Fogel, Stevenson and Messinger, 1982; Fogel, Toda & Kawai, 1988; Lebra, 1976; Miyake, Campos, Bradshaw & Kagan, 1986). Some Japanese researchers have insisted that Japanese mothers are indulgent toward their children and less concerned with fostering autonomy and independence (Azuma, 1994; Doi, 1973; Ujiie, 1997; Tsuneyosi, 1992). In contrast, American researchers have believed that autonomy and independence are one of central value in American culture (e. g. Bellah, Madsen, Sullivan, Swidler & Tipton, 1991). American mothers and researchers seemed to share the belief that parents should foster their infants' autonomy and independence through everyday socialization practices to infants' negative emotions (Demos, 1986; Kopp, 1989; Wenar, 1982; Zumbahlen, Koch & Pyevich, 1998).

Recently researchers have examined behavioral strategies to regulate emotion such as active avoidance, orientation toward caregiver, approach/withdrawal, attempts to control the situation, self-stimulation, and attention allocation (e. g. Braungart-Rieker, Garwood, Powers, & Notaro, 1998; Bridges, Grolnick, & Connell, 1997; Buss & Goldsmith, 1998; Kogan & Carter, 1996; Stifter & Braungart, 1995). According to Ginino & Tronick (1988), these behaviors could be classified into two comprehensive categories: Other-directed regulatory behaviors and self-directed-behaviors. Other-directed regulatory behaviors refer to those affective displays through which the infant cues the mother in order that she may aid or supplement the infant's organizational goals. Self-directed regulatory behaviors refer to the infant's own coping strategies to control his or her own affective state. The classification based the directions of behaviors would be critical perspective to compare emotional behaviors between Japan and the United States. Thompson (1994) discussed that American parents have fairly defined expectations that the child should develop capabilities for the self-management of emotion. American mothers may be recommended to give infants opportunities for own efforts of emotion regulation and reinforce their efforts (Brazelton, 1983; Spock, 1968), but they may underestimate other-directed efforts because the other-directed efforts may be recognized as passive, dependent and immature. American researchers shared the same frame of reference. For example, Demos (1986) described of short life history of Cathy who failed to develop self-regulatory ability until 8 months because her mother's over-nursing and over-involvement. According to Demos (1986), her mother nursed so quickly when Cathy expressed even mild fussy states. On the contrary, Japanese mothers tend to have so strong attachment to their infants. As described by many researchers, Japanese mothers try to minimize infant crying and they intervene so quickly to infants' distress

(e. g. Doi, 1973 ; Lebra, 1976 ; Miyake et al., 1986). It is quite natural and desirable for Japanese people that infants depend on their caregivers when they are in distress. For Japanese mothers, sensitivity to read infants ' affective display is very important. The other-directed regulatory behaviors may not be recognized as immature in Japan. Rather Japanese mothers may encourage infants ' efforts to elaborate other-directed regulatory behaviors.

Thus it was expected that infants ' emotion regulation would be different between Japanese and European American sample. It was hypothesized that Japanese infants would behave in more dependent ways when they experienced negative emotion, on the contrary European American infants would behave in more autonomous and independent ways.

METHOD

Participants

The participants were 11-month-old Japanese infants from Fukushima (n=20, 9 boys and 11 girls) and American infants from Berkeley, California (n=21, 13 boys and 8 girls). Participants were recruited from urban neighborhoods surrounding the universities at which data collection took place (Fukushima University, Fukushima city, Japan and University of California, Berkeley, California, USA). They were all healthy infants. The infants ' families were unpaid and took part on a voluntary basis.

Procedures

Observations were conducted after infants were exposed in stressful episodes, arm restraint and growling gorilla presentation (cf. Camras, Oster, Campos, Campos, Ujiie, Miyake, Wang & Meng, 1998 on detailed procedures). During both procedures, the infants were seated in a high chair and mothers sat in a chair on the infant's right side facing perpendicular to the infant. Mothers were instructed to remain passive during stimulus presentation. The coding began immediately upon the termination of the stressful episodes (post stressful episodes) and varied for each infant, depending on the lengths of the infant's crying episode. Although mothers instructed to restrain from responding to infants ' behaviors for a few seconds after removal of gorilla and freeing of the arms, they could respond and try to soothe for their infants. Then it could be observed infants ' negative emotion regulation in the relational context with their mothers during post stressful episodes.

Coding

Infants ' crying was coded every second. According to these data, latency of first ceasing of crying and duration of crying from mothers ' approach/touch with infants were computed. Infants ' behaviors toward mothers were rated into 1(observed) or 0(not observed) : Seeking proximal/contact with mothers, crying directed to mothers, changing tone of crying, and crying included " amae " tone. Mothers ' approaching/touching with infants was also coded every second.

Two trained coders independently rated the videotapes. Inter-rater agreement on crying was 95% ; agreement of infants ' seeking of proximal/contact with mothers was

100% ; crying directed to mothers was 100% ; agreement of changing tone of crying was 85% ; agreement of crying included " amae " tone was 94% ; agreement of mothers' approaching/touching with infants was 98%.

RESULTS

There was not statistical difference in quantitative aspects of crying. The percentages of infants who continued crying after removal of gorilla and freeing of the arms were almost the same in both samples. Infants who did not cry in stressful episodes or stopped crying immediately after removal of gorilla and freeing of the arms were 14 (8 in growling gorilla presentation and 6 in arm restraint) in Japanese and 17 (11 in growling gorilla presentation and 7 in arm restraint) in American as shown in Table 1.

The mean latency of infants' cessation of crying after mothers' approach/touch with infants was computed. As shown in Table 2, there was no significant difference between two samples. Many infants ceased crying by mothers' approaches/touches, but the cessations were temporary because they frequently resumed to cry. Thus mean duration of infants' crying after mothers' approaches/touches with infants was computed. As shown in Table 3, American infants cried longer than Japanese infants did in arm restraint procedure. On the contrary in growling gorilla procedure, Japanese infants cried longer than American infants did. But these differences did not reach significant level using ANOVA.

However, qualitatively there were obvious differences between two samples as shown in Table 4. The figures in Table 4 were numbers of infants who continued crying after removal of gorilla and freeing of the arms, the denominator was 26 for Japanese sample and 23 for American sample.

The numbers of infants who tried to retain proximity/contact with mothers during

Table 1 Numbers of crying in post stressor eposodes.

	Variables	Growling Gorilla	Arm Restraint	Total
Japanese infants	No cried/immediately recovered	8	6	14
	Ceased crying immediately but cried again soon	5	5	10
	Continued of crying	7	9	16
American infants	No cried/immediately recovered	11	7	18
	Ceased crying immediately but cried again soon	5	5	10
	Continued of crying	4	9	13

Table 2 Latency of first cessation of crying from when mothers approached/touched with infants.

	Growling Gorilla	Arm Restraint	Total
Japanese infants	7.83 (6.9) N=12	5.85 (5.84) N=14	6.46 (6.48) N=26
American Infants	5.28 (4.56) N=7	6.3 (6.3) N=13	6.25 (5.8) N=20[a)]

Note. a) Three were excluded because mothers did not approach.
The numbers in parenthesis are SD.

Table 3 Duration of crying from when mothers approached/touched with infants.

	Growling Gorilla	Arm Restraint	Total
Japanese infants	24.0 (14.6) N=12	9.35 (7.12) N=14	16.12 (13.38) N=26
American Infants	14.14 (11.86) N=7	14.46 (14.05) N=13	14.35 (13.32) N=20[a)]

Note. a) Three were excluded because mothers did not approach.
The numbers in parenthesis are SD.

Table 4 Numbers of those who displayed behavior categories toward mothers.

	Proximal/contact seeking	Crying directed to mothers	Changing tone of crying	Crying included " amae " tone
Japanese infants	19 (73.1%)	24 (92.3%)	24 (92.3%)	19 (73.1%)
American infants	6 (26.1%)	14 (60.9%)	11 (47.8%)	4 (17.4%)

post stressor episodes were significantly different between two samples, 19 in Japanese sample and 6 in American sample (x^2 =10.78, df=1, p<.01). Japanese infants showed leaning and/or reaching toward mothers frequently than American infants. Japanese infants sometimes held up their hands just like waiting to be picked up by their mothers, in contrast these behaviors did not observed in American sample. The numbers of infants who directed crying toward mothers during post stressor episodes were significantly different between two samples, 24 in Japanese sample and 14 in American sample (x^2=6.93, df=1, p<.01). The numbers of infants who changed their tone of crying during post stressor episodes were significantly different between two samples, 24 in Japanese sample and 11 in American sample (x^2=11.8, df=1, p<.01). In Japanese sample, some infants changed their tone of crying such as pitches and strength of their crying in complex ways. Some infants strengthened crying when their mothers tried to soothe them. Some infants ceased to cry immediately after stressful episodes, but when their mothers approached and contacted with and when they talked to infants, the infants showed fussing or crying. The numbers of infants who showed crying including " amae " tone were significantly different between two samples, 19 in Japanese sample and 4 in American sample (x^2=15.19, df=1, p<.01).

There was no significant difference in mothers' behaviors between two samples. Almost all mothers approached or touched infants after the experimenters told them that procedure was over. All Japanese mothers and eighty-seven percent of American mothers whose infants continued crying after removal of gorilla and freeing of the arms approached or touched their infants. The mean latencies of mothers' approach/touch with infants were shown in Table 5, and there was also no significant difference between two samples.

But the ways of approach/touch were different between two samples. Japanese mothers tended to approach to infants nearer than American mothers did. American mothers tended to contact only by hand, and they seldom moved their bodies close to

Table 5 Latency of mothers' first approaches/touches with infants.

	Growling Gorilla	Arm Restraint	Total
Japanese infants	2.2 (1.07) N=12	4.0 (2.53) N=14	3.15 (2.2) N=26
American Infants	1.57 (.49) N=7	2.13 (2.96) N=13	1.95 (2.48) N=20

Note. The numbers in parenthesis are SD.

infants. Japanese mothers actively initiated and organized the interactive processes in order to soothe infants' negative emotions.

DISCUSSION

The results of this study clearly supported hypothesis. Japanese infants behaved less autonomous and more dependent on their mothers than American infants did. During post stressful episodes, the majority of Japanese infants sought proximity and contact with their mothers. Some of them showed dependent and passive strategies, they held up their hands just like waiting to be picked up by their mothers. In contrast these behaviors did not observed in American sample. Almost all of Japanese infants directed crying toward their mothers. When the infants directed crying toward mothers, they changed tone of crying such as pitches and strength in very complex ways except only two. Moreover, very frequently the crying episodes of Japanese infants had "amae" tone. They looked like to appeal to mothers that they were in trouble and in need to be rescued urgently by mothers.

The infants' behaviors observed in this study would be interpretable in the line of literatures on early emotional socialization in Japanese culture (Caudille & Weinstein, 1969; Lebra, 1976; Miyake, Campos, Bradshaw & Kagan, 1986) and parental beliefs and goals (Azuma, 1994; Doi, 1973; Ujiie, 1997; Tsuneyoshi, 1992). According to these studies, Japanese mothers may have keen sensitivity to infants' signals and also feel heavy responsibility to infants' wellbeing.

If Japanese infants' behaviors observed in this study represented their behaviors in daily interaction, their dependent behaviors including expressions of "amae" would be an effective strategy to regulate their negative emotion. Japanese infants seemed to use their mothers as external regulators of their own negative emotions. At first, they regulate their expressions of negative emotions. They do not try to inhibit their own negative emotions. Instead, they modulate expressions of negative emotion so that they can tell the messages to mothers effectively that they are in need to be rescued urgently by mothers. They express negative emotions by changing crying patterns with "amae" tone. Second, when infants express negative emotions in ways mentioned above, Japanese mothers feel an urge to pick up infants and to relieve infants by holding tightly or keeping very near positions. Thus Japanese style of emotion regulation would be "relational emotion regulation".

In contrast, American infants seemed to develop simpler strategies for regulation of negative emotions. To regulate negative emotions, American infants depended on their mothers less than Japanese infants did. In fact they frequently showed referencing and

vocalizations toward their mothers in stressful episodes, but they seldom referred to their mothers and sought proximity/contact with their mothers during post stressful episodes. It was rare for American infants to change their crying pattern directed toward mothers with " amae " tone. American infants did not use " relational emotion regulation". They seemed to be autonomous and independent from their mothers as compared with Japanese infants.

In this study, the analysis using emotion regulation strategies was not done. But the results of this study could be comparable to discussions on emotion regulation strategies. Japanese infants showed mother-directed crying with changing of tone and " amae " tone so frequently than American infants. These results could be interpreted that Japanese infants used other-directed regulatory behaviors. On the contrary, American infants did not use other-directed regulatory behaviors. But there was no evidence to show that American infants used self-directed regulatory behaviors, although they seemed to behave more autonomously than Japanese infants.

American mothers neither moved close to the babies nor stayed beside infants for a long period. They looked like to inhibit excessive involvement, they tended to work on infants by some distal mode of interaction rather than actively seeking or keeping proximity with infants. These facts were consistent with American belief that parents should foster infants' autonomy and independence (Demos, 1986; Kopp, 1989; Wenar, 1982; Zumbahlen et al., 1998).

From an American point of view, mothers' excessive involvement in infants' negative emotion is not recommended because it may spoil infants' autonomy and independence (cf. Demos, 1986; Kopp, 1989). In contrast, Japanese mothers are advised to involve infants deeply because it may contribute to infants' well being (e. g. Matsuda, 1996). The facts described in this study may be consistent with background belief systems embedded in respective cultures. The results of this study would support Campos' functionalist approach to emotion and emotion regulation (Campos et al., 1989, 1994; Saarni et al., 1998).

In summary, the results of this study suggested a cultural variability of emotion regulation. Cultural difference between Japanese and European American samples would be attributable to infant-mother interaction context influenced by background belief on the nature of infant and parental role in socialization. Two kinds of emotion regulation strategies were documented. One is a relational emotion regulation, which has been observed among Japanese infants. Japanese infants seemed to use their mothers as external regulators of their own negative emotions and they would develop in direction to modulate expressions of negative emotion so that they could tell their messages to their mothers effectively. The other is the autonomous emotion regulation, which has been observed among American infants.

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