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# Maternal Interactional Quality in Two Cultural Environments

## German Middle Class and Cameroonian Rural Mothers

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This study compares German urban middle class with Cameroonian rural Nso mothers interacting with their 4-, 8-, and 12-week-olds on two dimensions of parenting: sensitivity and responsive control. Although the first concept is well-established in the literature, we suggest responsive control as the essence of good parenting leading to optimal development according to Nso mothers' ethnotheories. Although the two concepts differentiate between the two samples, the validity of responsive control in terms of developmental implications still has to be established.

**Keywords:** *culture; mother-child interaction; parenting quality*

Maternal sensitivity is regarded as a key indicator of the quality of mother-child interaction during the first year of life. Furthermore, sensitivity is supposed to be predictive of children's later developmental outcomes across cultures, although empirical evidence is ambiguous (cf. Thompson et al., 2005). It is defined as the caregiver's, mostly the mother's, ability to recognize the infant's signals as well as to interpret these signals accurately and to respond to them promptly and appropriately (Ainsworth, Bell, & Stayton, 1978). Cross-cultural studies, however, challenged the conception of sensitivity as a universal ideal of optimal parenting. They claim that the concept is based on the idea that infants have their own wishes, needs, desires, and preferences that caregivers have to fulfill and respect (LeVine & Miller, 1990; Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000). This philosophical basis is not equally appropriate in all sociocultural contexts (Keller, 2007).

Consequently, the question arises to which degree sensitivity is a valid measure of the quality of parenting in sociocultural contexts that differ from the predominantly autonomous sociocultural orientation of Western urban middle-class families. In contexts with a relational

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sociocultural orientation, interconnectedness with others and hierarchical relationships are central aspects of the self and social life (Markus & Kitayama, 1994). For example, it has been demonstrated that the Nso, an ethnic group from Bui Division of the Northwest Province of Cameroon with a subsistence-based economy, socialize children toward obedience, respect for elders, and responsibility for others (Keller, 2007; Yovsi, 2003). Obligations among kin people are a central responsibility that characterizes Nso life (Goheen, 1996). In this context, mothers are not expected to explore the mental state of the infant or to be responsive to the infant's communicative initiatives. Rather, children are regarded as apprentices and mothers know what is best for the baby. Accordingly, good parenting is characterized by parents taking the lead by controlling and training the infant (Keller, 2007). According to the ethno-theories of the Nso, this parenting strategy characterizes responsible parenting that puts into practice the most central socialization goal, that is, the infant's obedience and responsibility (Yovsi, 2003). We suggest responsive control as the concept that best captures this alternative concept of good parenting within these sociocultural contexts. Its defining constituents are emotional involvement and bodily closeness in caretaker-child interactions that are designed to monitor, instruct, train, and direct the infants' activities.

Only a few studies have examined interactional quality in non-Western cultures, among them the Ugandan Gandas (Ainsworth, 1967), Japanese (Vereijken, Riksen-Walraven, & Kondo-Ikemura, 1997), and Malian Dogon (True, Pisani, & Oumar, 2001). These studies concentrated on sensitivity as the core concept of parenting despite the substantial differences in sociocultural backgrounds and consequently in parenting strategies among these samples. Analyzing Nso mother-infant interactions using Ainsworth's concept of sensitivity alone is viable but misses the central aspect of Nso parenting, that is, the idea of responsive control, which, as a consequence, should lead to the desired development of obedience and responsibility. A first step into this direction is to develop an instrument that captures this central quality of mother-infant interaction in that sociocultural environment based on earlier work (Yovsi, 2003) that included case studies, ethnotheoretical accounts, behavioral observations, and ethnographic reports.

In the present study, we therefore measured two central aspects of parenting, sensitivity and responsive control, in two samples of mothers with different sociocultural orientations using the Ainsworth scale and the newly developed Yovsi scale. We coded mother-infant interactions of German middle class and rural Nso farmer mothers that were videotaped repeatedly when children were 4, 8, and 12 weeks old.

We hypothesized that, because of their different sociocultural orientations, German middle-class mothers score higher on sensitivity whereas Nso mothers score higher on responsive control. Furthermore, because the repetition and continuity of environmental influences is a prerequisite of socialization, we expected stability of the mothers' behavior over time (Quinn, 2003).

## Method

### Participants

Twenty families from Münster, a medium-sized city in northern Germany, and 30 Nso families living in small villages around Kumbo, Cameroon, participated in this study.

Gender was balanced across samples (Münster, 45% girls; Nso, 52% girls). Nso mothers were significantly younger ( $M = 27.00$  years,  $SD = 7.90$ ) than mothers from Münster ( $M = 30.70$  years,  $SD = 3.76$ ),  $T(48) = 2.41$ ,  $p < .05$ , Cohen's  $d = .70$ , despite the fact that only 31% of the Nso mothers and all mothers from Münster were primiparous,  $\chi^2 = 23.31$ ,  $p < .001$ . Furthermore, Nso mothers received less formal education ( $M = 8.21$  years,  $SD = 1.97$ ) than mothers from Münster ( $M = 14.35$  years,  $SD = 3.23$ ),  $T(48) = 8.45$ ,  $p < .001$ ,  $d = 2.44$ . According to the authors' sociostructural approach to culture, these patterns of sociodemographic differences are constitutive of the different sociocultural environments (Keller, 2007).

## Procedure

The mothers were first contacted during the last trimester of pregnancy through a pediatric hospital in Münster and through the health centre in Kumbo. After birth, appointments were made and mothers were visited at home when the infant was 4, 8, and 12 weeks old ( $\pm 2$  days). At each visit, mothers were instructed in their native language (German and Lamnso, respectively) to play with their infants as they would normally do. As we had tested in a pilot study, mothers in both cultural contexts had an understanding of playing with a baby. There are verbal labels for playing in both languages (German, *spielen*; Lamnso, *seeri*). The play situations were video-recorded for approximately 10 minutes. During the first family visit, a questionnaire concerning sociodemographic information was administered.

## Coding Sensitivity and Responsive Control

The 10-minute sequences were coded for the quality of maternal interaction based on an interval coding approach with 30-second intervals. Before coding sensitivity and responsive control, the raters coded the valence of each interval. All negative intervals, that is, intervals where the infant was either fussy for 10 successive seconds or cried for at least 3 seconds, were excluded from further analyses because they did not occur frequently enough to be analyzed separately (Münster,  $M = 4.82$ ,  $SD = 4.82$  and Nso,  $M = 2.21$ ,  $SD = 3.79$ ).

The mothers' sensitivity was coded using Ainsworth's 9-point scale (see Ainsworth et al., 1974). Each interval was coded, and means were used as the final scores for analyses.

The scale for coding responsive control was constructed analogous to the Ainsworth scale. The 9-point scale was designed to capture the essence of good parenting for Nso mothers, that is, bodily closeness while monitoring, instructing, training, directing, and controlling the infant's activities. The scale points are defined as follows: 9 (*extremely good*): The mother almost always controls and directs the ongoing activities of the infant with close body contact, vestibular and kinesthetic stimulation. The mother takes the lead showing and initiating the play for the infant. The mother is emotionally involved throughout. 7 (*good*): The mother is predominantly in control of the child's activities, although at times she might not be emotionally involved. 5 (*standard*): The mother provides the infant with tactile object stimulation and may at the same time be preoccupied with other things but still aware and in control of the infant. The mother is at times emotionally involved with

the child. 3 (*poor*): There is predominantly distant body contact with the infant. The mother positions the infant in a cuning position on laps while providing tactile, object, and vocal stimulation. The mother overstimulates the infant with no positive emotional involvement to the infant. The mother leaves the infant almost on his or her own without controlling his or her activities. 1 (*extremely poor*): The mother is in consistent lack of body contact with the child, with no body training or stimulation while leaving the infant completely on his or her own without controlling the activities. The mother's emotion is flat and even if she reacts, she does so just with object and/or vocal stimulation. Each 30-second interval was coded for responsive control and mean scores were used as the final scores for analyses.

### Interrater Reliability

Two pairs of German graduate students independently coded the interactions for sensitivity and responsive control. To check reliabilities, 20% of all interactions (week 4, 8, and 12 of five German and five Nso interactions) were rated by both coders. Reliabilities, overall and for each participant separately, ranged from Kendall's  $\tau = .84$  to  $\tau = .91$  for sensitivity and  $\tau = .86$  to  $\tau = .94$  for responsive control.

## Results

Two sets of analyses were conducted. First, we looked at the stability of sensitivity and responsive control across the infants' age, separately for the two cultural samples. Second, we tested for the hypothesized differences in sensitivity and responsive control between the two cultural samples.

### Stabilities of Sensitivity and Responsive Control Over Time

In the Münster sample, the sensitivity score of Week 4 correlated highly with the scores of Weeks 8 and 12,  $r_{4,8} = .67$  and  $r_{4,12} = .55$ ,  $ps < .01$ . However, there was no correlation between the latter two. For responsive control, only Weeks 8 and 12 correlated significantly in the Münster sample,  $r_{8,12} = .49$ ,  $p < .05$ . In the Nso sample, the scores of Week 4 correlated highly with Week 8, which in turn correlated highly with Week 12 for both sensitivity,  $r_{4,8} = .62$  and  $r_{8,12} = .55$ ,  $ps < .01$ , and responsive control,  $r_{4,8} = .64$  and  $r_{8,12} = .51$ ,  $ps < .01$ . Accordingly, both scales turned out to be reasonably stable over time for each of the two samples. There were no significant correlations between sensitivity and responsive control, correlations ranged between  $-.14$  and  $.37$  for the Münster and between  $.10$  and  $.24$  for the Nso sample, respectively.

### Differences Between the Cultural Groups

To test the hypothesized differences between the two cultural samples, we calculated a repeated-measure multivariate analysis of covariance (MANCOVA) with the within-subject factor age (4, 8, and 12 weeks) and the between-subject factor cultural sample, and both sensitivity and responsive control measures as the dependent variables. Because education is a potential confound (Tarabulsky et al., 2005), it was entered as a covariate.

**Table 1**  
**Sensitivity and Responsive Control Over Time for the Two Cultural Samples**

|                    | Cultural Community      |                    |                      |                    |
|--------------------|-------------------------|--------------------|----------------------|--------------------|
|                    | German ( <i>N</i> = 20) |                    | Nso ( <i>N</i> = 30) |                    |
|                    | Mean                    | Standard Deviation | Mean                 | Standard Deviation |
| Sensitivity        |                         |                    |                      |                    |
| Week 4             | 7.22                    | 1.07               | 7.06                 | 0.68               |
| Week 8             | 7.46                    | 1.02               | 7.06                 | 0.68               |
| Week 12            | 7.66                    | 0.92               | 6.94                 | 0.71               |
| Responsive control |                         |                    |                      |                    |
| Week 4             | 4.76                    | 1.32               | 7.05                 | 0.80               |
| Week 8             | 4.74                    | 1.38               | 7.02                 | 0.93               |
| Week 12            | 4.15                    | 0.78               | 6.99                 | 0.73               |

For the multivariate analysis, we found a significant main effect for cultural sample,  $F(2, 46) = 37.29, p < .001, \eta_p^2 = .62$ . Furthermore, the interaction between age and cultural sample reached significance,  $F(2, 44) = 2.70, p < .05, \eta_p^2 = .20$ . To qualify these findings, we computed univariate analyses of covariance (ANCOVAs) with the within-subject factor age (4, 8, and 12 weeks) and the between-subject factor cultural sample for each scale separately, while controlling for education. For responsive control, there was a significant main effect indicating higher values for Nso mothers,  $F(1, 47) = 56.35, p < .001, \eta_p^2 = .55$ , whereas the main effect for sensitivity did not reach significance,  $F(1, 47) = 3.41, p > .05, \eta_p^2 = .07$ . For sensitivity, there was, however, a significant sample  $\times$  age interaction effect,  $F(2, 46) = 3.48, p < .05, \eta_p^2 = .13$ . Over time, mothers from Münster were increasingly sensitive, whereas the Nso mothers showed constant sensitivity levels. The means and standard deviations for sensitivity and responsive control in the German and the Nso sample are shown in Table 1.

## Discussion

The present study argues that maternal sensitivity as defined by Mary Ainsworth cannot be regarded as the essence of early caregiving across cultures. This does not mean that, in certain sociocultural contexts, sensitivity would be irrelevant for the infant's later development. Rather, the potential developmental outcomes of sensitive caretaking do not coincide with what is regarded as most desirable in these environments. We argue that sensitivity cannot necessarily be the key dimension of children's healthy development across cultures (cf. Rothbaum et al., 2000), because what is regarded as "healthy development" heavily depends on culture-specific socializations goals and ethnotheories (Keller, 2007). For the Nso, it is the concept of responsive control that captures the essence of good parenting (Yovsi, 2003). According to their ethnotheories, responsive control leads to what they regard as optimal and healthy development throughout life, that is, obedience toward those with higher social status and responsibility for those with lower social status.

To see whether the two aspects of parenting, sensitivity and responsive control, differ between different sociocultural contexts, we compared urban middle-class mothers from Northern Germany with rural Nso mothers. As expected, Nso mothers scored much higher on responsive control than mothers from Münster at all points of time, whereas, different from our hypothesis, the difference in sensitivity only developed over time. A possible explanation of this differential development is that responsive control is caretaker-centered and depends much less on the infant's developing communicative competencies. However, mothers might react more and more sensitively as the quality of infant signals changes with age. Thus, the so-called 2-month shift, that is, when infants start smiling socially and exploring their caretakers' faces, sets the stage for culture-specific manifestations of sensitive caretaking.

Because socialization of infants depends on continuity in terms of making similar experiences repeatedly, we looked at the stability of sensitivity and responsive control across their first 3 months of life and found that both aspects were reasonably stable over time.

However, this is only a first step in our effort to establish responsive control as the key dimension of Nso parenting. Even if responsive control captures the key dimension of Nso ethnotheories, its relevance for the inherent conception of "healthy development" has to be supported empirically. Indirectly, the link is supported by empirical data showing higher levels of compliance in 19-month old Nso toddlers as compared with toddlers from other sociocultural contexts (Keller et al., 2004). However, in a next step, one has to put to test the theoretical assumption inherent in the Nso cultural model by relating parenting behavior, that is, responsive control, to developmental outcomes, that is, indicators of obedience and responsibility more directly. Furthermore, responsive control as an important dimension of parenting has to be evaluated also in cultural environments with similar socialization goals as the Nso to better understand global conceptions of parenting.

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