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A CROSS-CULTURAL STUDY OF MOTHER-CHILD INTERACTION IN CHINESE AND AMERICAN FAMILIES

Xiao-lei Wang – Carolyn Mylander – Susan Goldin-Meadow

It is widely held that there are large differences in the way Chinese and American mothers interact with their hearing children. This study asks whether those differences extend to the way mothers in the two cultures interact with children who are deaf and cannot communicate using the spoken language of the community. Eight mother-child dyads (four with hearing children and four with deaf children) from Taiwan and eight comparable mother-child dyads from the United States were video-recorded during two-hour long sessions of natural interactions in the home. The mean age of the children in each of the eight groups was approximately 3.3 years, and each group contained two girls and two boys. As anticipated, several differences were found in the way the mothers interacted with their hearing children in the two cultures. These cultural differences were exaggerated in the mothers of deaf children. Even in an area where there were no differences found between the mothers of hearing children in the two cultures (i.e., in the number of turns mother takes within an episode), the mothers of the deaf children in the two cultures exhibited differences. The Chinese mothers of deaf children took more turns than the American mothers of deaf children.

Chinese and American cultures differ in important ways in their fundamental beliefs about human nature. Chinese culture emphasizes the alterability of human nature by highlighting the power of the environment in affecting human development (Munro, 1979).

In contrast, American culture emphasizes the power of innateness and the unalterability of human nature (Munro, 1979). Consistent with these distinct beliefs, the two cultures demonstrate differences in their child-rearing practices (e.g., Ho & Kang, 1984; Tobin, Wu, & Davidson, 1989; Wang, 1992; Wu, 1985). Recent empirical studies suggest that Chinese parents are more involved in their school-age children's academic achievement than are American parents, allocating proportionately more energy and time to their children's school work (Chen & Uttal, 1988; Stevenson et al., 1990). However, little is known about whether Chinese and American parents extend these practices to handicapped children, particularly those children who cannot hear and therefore have difficulty learning the spoken language of their community.

The goal of this study is to examine whether mothers in Chinese and American cultures interact with a deaf child in the same manner as they interact with a hearing child, thus exhibiting a comparable – or perhaps even an exaggerated – pattern of cultural differences. To pursue this goal, we observed Chinese and American mothers interacting with their deaf children and, for comparison, mothers in the same two cultures interacting with their hearing children.

METHOD AND PROCEDURES

Subjects

Sixteen pairs of Chinese and American mothers and children participated in the study. The Chinese subjects were recruited in Taipei, Taiwan, and the American subjects were recruited in Chicago and Philadelphia in the United States. The subjects from the two cultures were balanced by number, age, sex, and family backgrounds. The mean age of the hearing and deaf children was approximately three years and three months. All the subjects in the two cultures were from middle-class families.

Data Collection and Coding

The mothers in the study were videotaped while engaging in activities with the child in the home. Thirty-two hours of videotaped observations were collected and served as the basis of analysis (two-hour observations for each mother-child dyad). Data were collected by researchers native to each of the two cultures. The Chinese data were collected by native Chinese speakers and the American data were collected by native English speakers.

We first transcribed the verbal and nonverbal behaviors of the mothers and children verbatim. We then coded all the verbal and nonverbal behaviors according to their functions in context. We characterized the mother's role in the interaction in terms of (1) how often she initiated an interactional episode, (2) the type of instructional style she used in the interaction, (3) how often she used nonverbal behaviors in her communications, and (4) the number of turns she took in each episode.

Reliability for each of these measures was established between two coders. All the data was initially coded by a primary coder. A second coder then independently transcribed a subset of the videotapes (15 episodes from 12 randomly chosen mother-child dyads). The second coder's transcription was then compared with the transcription of the primary coder and the agreement between the two coders was calculated. Inter-coder agreement was 91% (# 180 episodes for 12 mother-child dyads) for identifying interaction episodes; 85% (# 502 behaviors for 12 mothers) for assigning an instructional style to the mother's behaviors; 88% (# 502 behaviors for 12 mothers) for identifying verbal and nonverbal components in the mother's communications; and 95% (# 360 turns for 12 mother-child dyads) for identifying the number of turns taken.

RESULTS

Initiations

We first measured how often the mother (as opposed to the

child) initiated an interaction. We divided the activities shared by mother and child into episodes. An episode is defined in terms of activity centering around a specific event. For example, one of the Chinese children, Bofu, was playing with puzzle pieces while his mother watched and questioned him. All the verbal and nonverbal behaviors between the mother and the child centering around the puzzle were coded as a single episode.

Once identified the boundaries of episodes, we then determined who initiated the interaction within the episode, mother or child. For each mother-child dyad, we determined the total number of episodes that the dyad participated in during the observation session, and calculated the proportion of those episodes initiated by the mother. *Figure 1* presents the mean proportion of episodes that mothers initiated when interacting with their hearing children (the black bars) or their deaf children (the white bars) in the two cultures (the Chinese dyads on the left, the American dyads on the right). There were significant effects of both culture ($F(1,12) = 311.8, p < .001$) and hearing status ($F(1,12) = 4.7, p < .05$; the data were transformed using an inverse sign transformation for proportions before statistical analyses were performed here and in all relevant subsequent analyses). The Chinese mothers were far more likely to initiate episodes than were the American mothers. Indeed, all eight Chi-

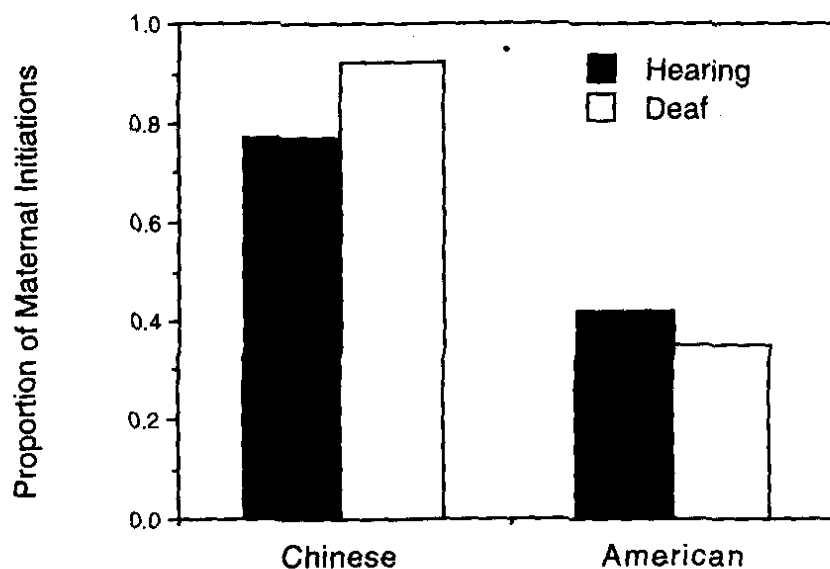


Figure 1 – The Proportion of Episodes the Mothers Initiated when Interacting with their Hearing Children (black bars) or their Deaf Children (white bars) in the Chinese and American Dyads.

nese mothers initiated over 50% of their episodes with their children – that is, they each initiated more episodes than their child did. In contrast, all eight American mothers initiated fewer than 50% of their episodes with their children –in other words, they each initiated fewer episodes than their child did.

However, there was also a statistically significant interaction between culture and hearing status ($F(1,12) = 29.2, p < .001$) such that the cultural difference in the mothers' interactions with hearing children was exaggerated in interactions with deaf children. The Chinese mothers of the deaf children initiated interactions even more than the Chinese mothers of the hearing children ($p < .01$, Newman-Keuls pairwise comparison) and, conversely, the American mothers of the deaf children initiated interactions less often than the American mothers of the hearing children ($p < .05$, Newman-Keuls). As a result, the biggest difference among the four groups was found between the Chinese mothers of the deaf children and the American mothers of the deaf children ($p < .01$, Newman-Keuls) – the Chinese mothers initiated episodes far more frequently with their deaf children than the American mothers did with their deaf children.

Instructional Style

Next, we turned to how the mothers gave instructions to their children during their interactions. The mothers used two very different styles to give their children directions. In the first, the mother gave the direction and immediately followed it up with additional instruction, leaving the child little opportunity to respond. We called this type of instruction «immediate». In the second style, the mother gave the direction and then waited a period of time before giving additional instruction. We called this type of instruction «deferred».

Figure 2 presents the mean proportion of instructions that were immediate (as opposed to deferred) that the mothers gave when interacting with their hearing children (the black bars) or their deaf children (the white bars) in the two cultures (the Chinese dyads on the left, the American dyads on the right).

There were significant effects of both culture ($F(1,12) = 8871.7, p < .0001$) and hearing status ($F(1,12) = 57.4, p < .0001$),

and a significant interaction between the two factors ($F(1,12) = 167.7, p < .0001$).

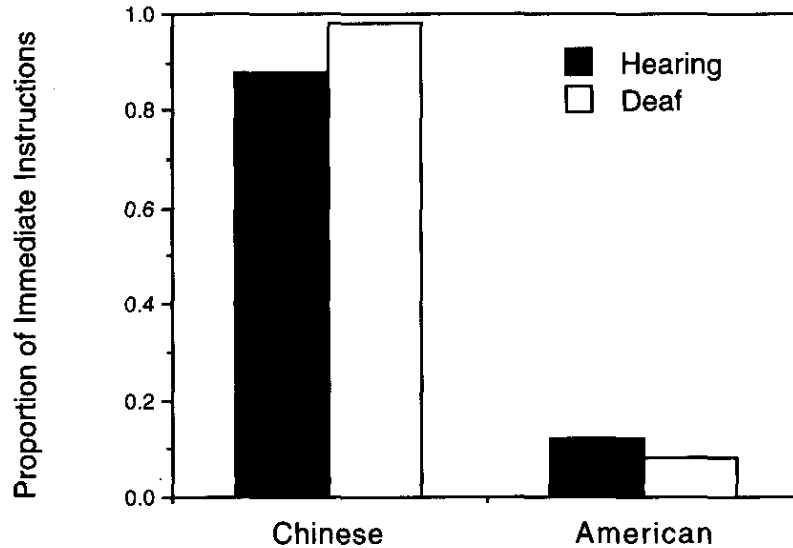


Figure 2 – The Proportion of Episodes in which Mothers Used Immediate Instructions when Interacting with their Hearing Children (black bars) or their Deaf Children (white bars) in the Chinese and American Dyads.

The Chinese mothers used immediate instruction in almost all their interactions and the American mothers used this type of instruction in almost none of their interactions. Although the cultural difference in the proportion of mothers' immediate instructions to hearing children was already quite large, this difference was exaggerated in interactions with deaf children.

The Chinese mothers of the deaf children were even more likely to use immediate instructions than were the Chinese mothers of the hearing children ($p < .01$, Newman-Keuls). Conversely, the American mothers of the deaf children were less likely to use immediate instructions than were the American mothers of the hearing children ($p < .01$, Newman-Keuls). The difference between the American mothers of hearing vs. deaf children was not large; however, it was consistent – all four American mothers of deaf children used proportionately fewer immediate instructions than all four American mothers of hearing children. As a result, once again, the biggest difference among the four groups was found between the Chinese mothers of the deaf children and the American mothers of the deaf children ($p <$

.01, Newman-Keuls) – the Chinese mothers used immediate instructions far more frequently with their deaf children than the American mothers did with their deaf children.

Nonverbal Communication

The deaf children in our study had made little progress in learning spoken language despite their oral training. Rather than use speech, they tended to rely on spontaneous gestures and other nonverbal means to communicate with the hearing individuals around them (Goldin-Meadow & Mylander, 1984; Wang, Mylander, & Goldin-Meadow, 1993, 1995). Given the deaf children's difficulty with speech, we might expect that the hearing parents would supplement the speech they directed to their deaf children with nonverbal devices. To determine whether the mothers did, in fact, take the special needs of their deaf children into account in their interactions with their child, we calculated how many of their communications contained gestures (e.g., pointing) or other nonverbal behaviors (e.g., touching the child's face to get attention).

Figure 3 presents the mean proportion of mothers' communications containing nonverbal components in interactions with their hearing children (the black bars) or their deaf children (the white bars) in the two cultures (the Chinese dyads on the left, the American dyads on the right). There were significant effects of both culture ($F(1,12) = 205.47, p < .0001$) and hearing status ($F(1,12) = 45.8, p < .0001$), and a significant interaction between the two factors ($F(1,12) = 20.1, p < .001$).

The Chinese mothers used more communications containing nonverbal components than did the American mothers. This cultural difference was exaggerated in interactions with the deaf children. The Chinese mothers were even more likely to use nonverbal components in their communications with their deaf children than with their hearing children ($p < .01$, Newman-Keuls), and the American mothers were just as likely to use nonverbal communication with their deaf children as with their hearing children. Thus, there was a large and significant difference between the Chinese mothers of the deaf children and the American mothers of the deaf children ($p < .01$, Newman-Keuls) – the Chinese mothers included nonverbal compo-

nents in their communications with their deaf children far more frequently than did the American mothers.

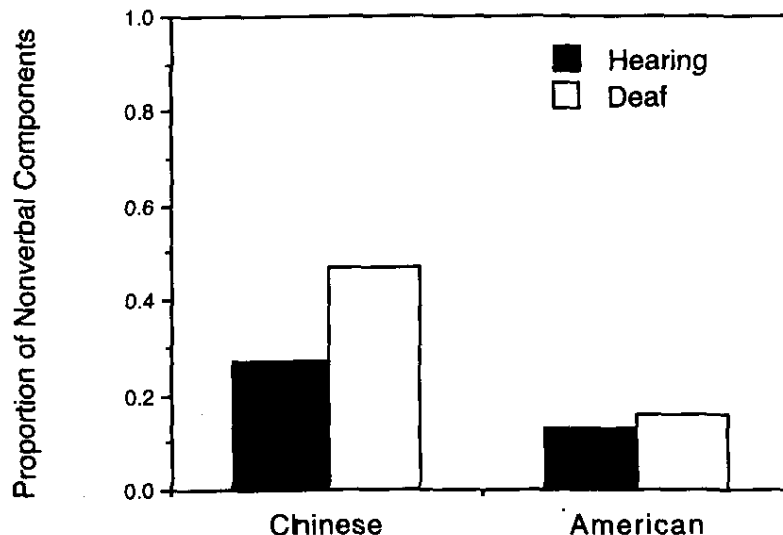


Figure 3 – The Proportion of Communications Containing Nonverbal Components that the Mothers Used when Interacting with their Hearing Children (black bars) or their Deaf Children (white bars) in the Chinese and American Dyads.

Number of Turns

The final measure we examined was how persistent the mothers were in their interactions with their children; we calculated how many turns each mother took per episode. A turn was defined as the period when a speaker had the floor. The end of a turn was assumed to occur when the speaker paused and offered the floor to the partner. If the partner did not take the offer – in other words, if the partner did not respond – the turn was considered over. A speaker could take several turns in a row without the partner having any turns in between. For example, while the Chinese deaf child, Bofu, was playing with a puzzle, his mother asked him what the picture was on one of the puzzle pieces. Bofu did not respond to his mother and continued to play with the toy. Rather than stop at this point, the mother continued to question the child until she received a response. Each one of the mother's requests for information was considered a separate turn.

Figure 4 presents the mean number of turns that the mothers took per episode in interactions with their hearing children (the black bars) or their deaf children (the white bars) in the two cultures (the Chinese dyads on the left, the American dyads on the right). As in the previous measures, there were significant effects of both culture ($F(1,12) = 14.4, p < .005$) and hearing status ($F(1,12) = 28.1, p < .0005$), and a significant interaction between the two factors ($F(1,12) = 10.8, p < .01$).

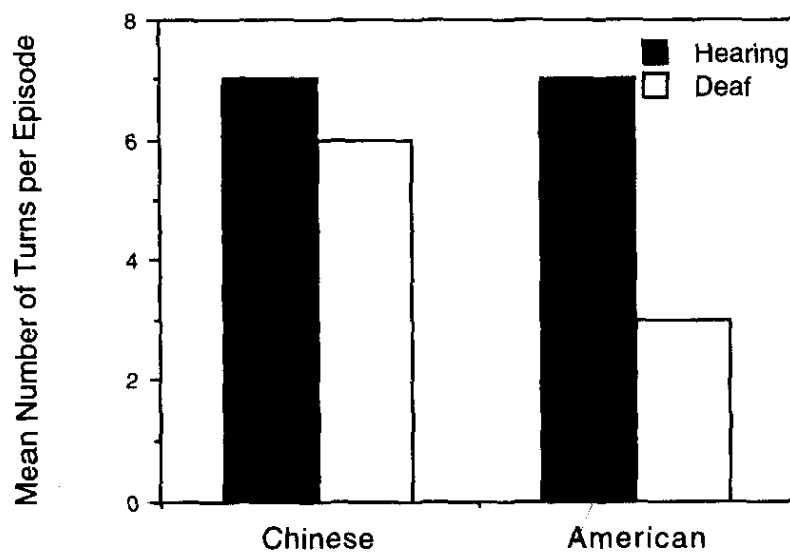


Figure 4 – The Number of Turns that the Mothers Took when Interacting with their Hearing Children (black bars) or their Deaf Children (white bars) in the Chinese and American Dyads.

Note however that, unlike our previous measures, there were no differences between the average number of turns taken by the Chinese and American mothers of hearing children. Interestingly, however, when we look at the data for mothers of deaf children in the two cultures, we see a cultural difference emerge. The mothers of the deaf children did not take as many turns per episode as did the mothers of the hearing children in either culture (this difference was statistically significant, $p < .01$, Newman-Keuls, for the American mothers but not for the Chinese mothers). However, the Chinese mothers of the deaf children took significantly more turns than did the American mothers of the deaf children ($p < .01$, Newman-Keuls). Thus, even in an area where there were no differences between the mothers of hearing children in the two cultures, the mothers of the

deaf children showed differences – once again, with the Chinese mothers participating more intensively in the interactions than the American mothers.

CONCLUSION AND DISCUSSION

The data presented here support the hypothesis that the interaction styles parents use with their children are guided by their cultural beliefs about human nature and child-rearing.

Consistent with the general Chinese ideology that hard work and effort on the part of parents and children are essential to realize a child's potential (Chen & Uttal, 1988; Suzuki, 1980), the Chinese mothers in our study made more effort than their American counterparts to engage their young hearing children in interaction. They initiated more interactions, they used a more direct and immediate instructional style, and they included more nonverbal behaviors in their communications. The Chinese mothers appeared to be more active participants in interactions with their hearing children than were the American mothers. When communicating with their deaf children, the Chinese mothers were found to exaggerate the interaction patterns typically found with hearing children, in effect redoubling their efforts to involve the child in interaction and accommodate to the needs of the deaf.

In contrast, the American mothers may have been guided by the belief that a child's achievement is limited by that child's inherent capacities. If so, the American mothers may have responded to their children according to their own preconceived notions about the child's abilities, reducing the amount of stimulation to the level that they thought their deaf children could handle or, at the least, not increasing the amount of stimulation they offered their deaf children over the amount they offered their hearing children. An alternative possibility is that the strategy adopted by the American mothers of both the hearing and deaf children in our sample – sitting back and letting the child guide the interaction – represents an attempt to foster the independence that is so highly valued in American culture. Thus, rather than reflecting a lack of involvement in their interactions with their children, the American mothers' sitting-back strat-

egy may have been guided by the belief that children ought to be encouraged to become independent participants in social interactions.

There are two important methodological issues to stress in our study. The first is that the data were collected by researchers native to the Chinese and American cultures represented in our study. Natives from a particular culture know the norms of that culture. As a result, their interactions with a subject (who is also a member of that culture) are likely to be culturally appropriate. In addition, people tend to trust those who share their own cultural backgrounds. Thus, subjects are likely to feel comfortable interacting with a native researcher and to behave more naturally. Finally, the native researcher understands the subtleties of an interaction and is more likely to be able to easily clarify questions and issues on the spot.

The second methodological issue that we stress is the importance of observing on-line behavior as well as cultural beliefs about behavior. The literature suggests that there are differences in the beliefs about how children ought to be treated in Chinese and American cultures. However, it is not sufficient to assume that these beliefs manifest themselves in the actual interactions that parents have with their children. Moreover, it is not sufficient to assume that the behaviors observed with one group of children will necessarily emerge in interactions with children of different ages and of different abilities. Our study was designed to examine the way mothers actually behave with their children, focusing particularly on whether those behaviors are also exhibited with children who lack one sensory modality, i.e. hearing. Our study has two important results. First, the beliefs about child-rearing commonly attributed to the Chinese and American cultures are indeed evident in the way mothers actually interact with their children. Second, the cultural differences in interactional styles found between mothers of hearing children are exaggerated and even more extreme when Chinese and American mothers interact with a deaf child.

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