

# Cultural Differences in Physical Contact Between Hispanic and Anglo Mother–Infant Dyads Living in the United States

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This is a study of differences in physical contact and tactile interpersonal behaviours between Hispanic and Anglo mothers and infants living in the United States. Infants were 9 months old and 52 mother–infant dyads, 26 Hispanic and 26 Anglo, were videotaped during free play without toys in a university laboratory playroom. Coders judged the interpersonal distance, physical contact and affectionate touch from the videotapes and mothers responded to a questionnaire about the importance of physical contact and affectionate touch in their relationship with their infant. From questionnaire data we found that Hispanic and Anglo mothers both touch their infants on a daily basis, although Hispanic mothers report touching more frequently, being more affectionate with their infants and having more skin-to-skin contact. From videotaped observations we found that there were no overall differences in mother–infant touch between the two cultures; however, the Hispanic mothers showed more close touch and more close and affectionate touch compared to Anglo mothers, who showed more distal touch. The results are discussed in terms of the role of touch in infant development and cultural differences in the evaluation of close physical contact and touch.

*Keywords:* mother–infant interaction; touch; cultural differences; Hispanic-American; Anglo-American; infancy; physical contact; affection; communication

Cultural context is achieving greater recognition in mainstream psychology, and many contemporary psychological investigations acknowledge that cross-cultural inquiry is essential in understanding

human development (Berry, 1983; Kennedy *et al.*, 1984; Moghaddam, 1987; Russell, 1984; Segall, 1986; Sexton and Misiak, 1984; Triandis, 1980). The cultural contexts in which children are reared constitute a central yet often neglected factor in developmental study (Bornstein, 1990). In this paper, we study differences in the role of touch and physical contact between Hispanic and

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Anglo-American groups living in the United States, as reflected in observations of early mother–infant communication. In the following introduction, we review the literature on general Hispanic–Anglo cultural differences, on Hispanic–Anglo differences in mother–infant communication and touching, and on the role of touch in infant development.

### *Hispanic and Anglo Cultures*

Research on Hispanic and Anglo cultures has shown substantial differences. Ardilla-Espinel (1982) compared Anglo-Saxon culture and Hispanic-American culture based on psychological and anthropological criteria. According to Ardilla-Espinel, in the cognitive arena, Anglos are more likely to be field-independent, deductive, achievement motivated and individualistic. Hispanics are more likely to be field-dependent, inductive, motivated by affiliation rather than achievement and communal. Emotional involvement is more typical of Hispanics compared to Anglos. Hispanics are found to have a higher degree of interpersonal closeness, while Anglos are found to be relatively more impersonal and distant.

Other studies have shown that differences between Anglos and Hispanics exist even when demographic variables including income, acculturation, family size, area of residence and education are controlled statistically. Lucca-Irizarry and Pacheco-Maldonado (1989) investigated child-rearing practices among 84 first- and 84 second-generation Puerto Rican mothers. Based on a 1-hour interview, mothers of both generations stressed the prime importance of family ties, respect, good manners, faith, love, obedience and samaritanism as a guarantee towards a harmonious and fruitful life. The investigators found no substantial differences in child-rearing ideology and practice between the two groups. On the contrary, both groups expressed the same values with regard to child-rearing practices.

Alvarez-Burgos (1972) made a comparative analysis between families in Puerto Rico and families in the mainland United States, using Kluckhohn's value orientation scheme with regard to the orientation of man–nature, time, activity and relationship orientation. Puerto Rican families felt more subjugated to nature, had a present time orientation and a relational orientation. Families in the mainland of the United States were more concerned about mastery over nature, were more future oriented and had an individualistic

relational orientation. Similar results were reported by Alvarado (1967). Archilla (1985) performed an analysis of the socialization process of families in Puerto Rico from a macrostructural perspective. In her analysis, Archilla (1985) stated that 'strong affective ties develop within an informal support system that consisted primarily of relatives and neighbours who lived within the same community'. The well-being of children is one of the most important goals within the family and 'familism and loyalty to one's own family are cherished interpersonal values in Puerto Rican families'. Negy (1993) made a comparative analysis between Anglo and Hispanic-American families in the United States using a Family Attitude Scale. The Hispanic-American group scored significantly higher than the Anglo group in four of the eight subscales: loyalty to one's family, strictness of child-rearing, respect for adults and religiosity.

### *Hispanic and Anglo Mother–Infant Communication and Touch*

In this section, we review literature suggesting that there are also differences in the mother–infant communication between Hispanic and Anglo cultures, and especially in the frequency and type of physical contact. Studies from Guatemala and Brazil, reviewed by Klaus and Kennell (1976) and by Lozoff and Brittenham (1979), indicate the widespread use of skin-to-skin contact among these populations. Another study done by Hales *et al.* (1977) with 20 Guatemalan mothers and their newborn babies shows the existence of affectionate behaviour among this group, defined as: eye contact with, looking at, talking to, kissing, smiling and fondling the baby.

Scheper-Hughes (1984) in her observations of 72 Brazilian mothers' interactions with their babies in Alto, Brazil, found that the mother sleeps together with her baby until the baby is considered old enough to sleep on its own. It was also noticed that the infant spends many hours of the day in the arms of the mother or, when older, balancing on the hip of the mother. There is a great deal of physical affection expressed towards the infant via strokes, tickles, sniffs, kisses, etc, by all members of the household. These studies, however, were not comparative so that we do not know whether the observed amounts of physical contact and affection differ between Anglo and Hispanic mothers.

Only a small number of studies have used a direct comparison of cultural differences in

mother–infant interaction for Hispanic and Anglo groups. Trenathan (1988), for example, conducted a cross-cultural study with a 48-subject sample of 34 Hispanic and 14 Anglo mother–infant dyads. Data were collected over an 8-month period beginning at birth. Trenathan (1988) found that Hispanic mothers spend more time with and talk more to their infants than Anglo mothers.

Field (1981) conducted interviews with 34 Cuban-American, African-American and Haitian-American mothers when their infants were between 3 and 4 months old. According to maternal reports, Cuban-American mothers generally pamper and talk to their infants constantly, and Cuban-American infants are the centre of the household. They receive everyone's attention, including parents, grandparents, aunts, uncles, friends, etc. Cuban-American children appear to 'enjoy being carried everywhere and rocked a great deal, are scolded infrequently, and are seldom physically punished'. In videotaped observations and these same mother–infant dyads, Cuban-American mothers touched, looked at, talked to, smiled at and laughed with their infants more frequently than other groups (Field and Widmayer, 1981).

Finally, Beckwith (1984) conducted a study with 126 pre-term infants based on naturalistic observation of mother–infant communication in the home at 1, 3, 8 and 24 months. Beckwith reports comparative analyses of 'Spanish-speaking' vs 'English-speaking' families, but does not report the number of subjects in each group, and the only description of the Spanish-speaking families is that they were 'an immigrant group in the poorest social circumstances'. The Spanish-speaking group 'talked less to their infants and held their infants less in the early months'. Also, during the first year, the Spanish-speaking parents were more frequently contingent and responsive to infant boys compared to girls. This study is difficult to evaluate since no details of sampling are given, nor are any statistics reported.

Generally speaking, although closeness and physical contact is an expressed value of Hispanic cultures, there are few conclusive findings regarding the differences in mother–infant physical contact between Hispanic and Anglo cultural groups. Family background, income and infant gender may be factors in explaining observed differences, but these have not been studied systematically. Lozoff and Brittenham (1979) noted that in industrial societies, there is more frequent separation of mothers and their infants in different

rooms in the home, minimal body contact and spaced artificial feeding. If this is the case, Hispanic–Anglo differences in mother–infant touch may be the result of differences in level of economic development. Thus one might expect such differences to be more likely among lower-income Hispanic families. In this study, we will examine income as a potential explanatory factor.

### *The Role of Affection and Touch in Infancy*

Clearly, affection and touch are essential ingredients of early infant development. Variation in patterns of holding, caring and touching gives us an opportunity to observe and understand what physical affection and touch mean to the infant, to the parents and to the culture (Hopkins and Westra, 1988). The early work of Harlow (1958) found that the need for warmth and affection is essential for the emotional security of infant monkeys. Reite (1990) suggested that touch is important at all ages and that the psychological and physiological well-being of adults may be influenced by the amount and quality of the touch they received as infants by their mothers. Several studies in his laboratory with pigtail macaque monkey infants suggested that there is a relationship between touch, attachment and health.

The quality of mother–infant affection and touch influences later social, affective and cognitive development. Hugs and loving touches contribute to early childhood attachment and development (Endsley and Bradbard, 1981; Hans and Clifford, 1980; Hyson *et al.*, 1988; National Academy of Early Childhood Programs, 1984; Prescott *et al.*, 1972; Scarr, 1984). Secure attachment seems to facilitate the child's ability to explore (Ainsworth *et al.*, 1978), albeit with periodic refuelling (Mahler *et al.*, 1975), via a hug, a kiss, or a cuddle. Moreover, in the child-rearing literature, warmth and nurturance has been linked to children's development of positive self-concepts (Coopersmith, 1967) and also to prosocial behaviours (Zahn-Waxler *et al.*, 1979).

Rose (1990), in her literature review, states that hugs and caresses between parents and their young offer an influence on maturation of the central nervous system and in later development. Anisfeld *et al.* (1990) randomly assigned soft baby carriers ('snugglies') to low-income mothers of newborn infants. Infants of mothers who received this experimental facilitator of body contact were significantly more likely to be securely attached at 12 months of age than the control infants.

Instruction in infant massage and relaxation bathing with infants given to parents of newborns had a beneficial effect on the parents. At 12 weeks postpartum, parents who received this instruction showed higher degrees of self-esteem and marital satisfaction and lower levels of depression compared to parents in the control group (Samuels *et al.*, 1992).

Kisileusle *et al.* (1991) showed that newborns' and infants' responses to tactile stimulation indicate a positive effect in infant development. They found that touch elicits a high percentage of smiling in the infant, as well as arousal and calmness. Other research using the still-face paradigm with infants between 2 and 5 months of age shows that if mothers continue to touch the infant during the still-face period, the infant gazes away less and becomes less upset than if the still-face occurs without any touching (Stack and Muir, 1992).

### Research Questions

The importance of touch in infancy suggests the need to examine cultural differences in touch more closely, and especially the possible Anglo-Hispanic cultural differences in mother-infant touch. The scarcity of good comparative research on this topic suggests that further research needs to be done. There are no systematic observational studies directly comparing Hispanic and Anglo mother-infant interaction with regard to touch. In the study presented here, we compare physical contact and physical affection between Anglo and Hispanic-American mothers and their infants. Based on our review of the literature, we hypothesized that the Hispanic mother-infant relationship would show a higher quantity of touch and affection than the Anglos. We also hypothesized that Hispanic mothers would give higher ratings to the importance of touch and close physical proximity with the infant.

## METHOD

### Subjects

Fifty-two mother-infant dyads were recruited from Hispanic and Anglo communities, through local and Hispanic newspapers, churches and child care facilities in the Salt Lake City valley during the 1992-1993 academic year. The mothers were asked if they would like to participate in a cross-cultural study of mother-infant interaction. Fifty-four

mother-infant dyads were contacted in this manner and only two did not participate in the study. Once subjects came to the lab, there was no attrition due to subject fussiness or equipment malfunction. If these occurred, the dyad was rescheduled for a later visit to the lab. Infants were normal, healthy 9-month-olds (between 36 and 41 weeks old). Thirteen male and 13 female Hispanics, and 17 male and nine female Anglo infants were used. Among the Hispanic mothers, 18 were first-generation immigrants who spoke relatively little English. Eight were second generation and none were third generation. Thus, we have a relatively unacculturated sample and not enough second or later generation immigrants to test hypotheses about the effects of acculturation. We also recruited the infants' natural mothers, all of whom volunteered their participation.

### Procedure

The procedures were identical for dyads from both groups. The study consisted of two observation sessions of videotaping, 15 minutes each in a carpeted laboratory playroom, length 14ft 8in, width 10ft 11in. The room had no furniture.

The sessions took place approximately 1 week apart. The first session was used as a familiarization period, and only the second session was coded. Before the videotaping sessions, the mothers were asked to read and sign an informed consent form. Before starting the procedure, both groups of mothers listened to tape-recorded instructions, in the language of their choice. The instructions were cross-translated by three bilingual speakers (the first three authors). The English version went as follows: 'During the 15 minutes of the videotaping session, relax and make yourself comfortable. Be yourself with your baby, as if you were at home. Position yourself in the triangle formed by the three cameras. There are two toys underneath a blanket at your disposal to use only if absolutely necessary. We are interested in mother-infant interaction and communication, just between you and your baby. If you have any questions, please feel free to ask'. The Spanish version went as follows: 'Durante los 15 minutos de la sesión de video, relájese y póngase cómoda. Sea con su bebé, como es en su casa. Acomódese en el centro del triángulo formado por las tres cámaras. Hay dos juguetes a su disposición para que usted los use si es absolutamente necesario. Estamos interesados en observar la relación y la comunicación entre usted y su bebé. Si tiene alguna

pregunta, por favor siéntase libre de preguntar'. The mothers were given an award to thank them for their participation, and a copy of the video for them to take home.

Three remote control cameras were mounted on the wall of the playroom. The two cameras containing the best views of the dyad were mixed by a special effects generator and a digital clock accurate to 0.1 s was superimposed on the tape. The mothers were told to position themselves with their babies so that three cameras could view them properly. There were two toys underneath a blanket at their disposal for use, but mothers were asked to use them only if absolutely necessary.

After the second videotaping session, a questionnaire for the mothers was given to assess background information and frequency of touch. The questionnaire, as well as the informed consent and instructions to the mothers, was presented in English or Spanish, depending upon the mother's preferred language. All three documents were cross-translated by the same three bilingual speakers.

### Coding and Reliability

A coding system with six categories (see Table 1) was developed to analyse mother and infant touch. The coding was done by three undergraduate research assistants. Each coder was instructed to watch the videotape and pause it when a code changed so they could record the behaviour category and time from the digital clock on the screen. Although coders were not blind to the culture of the participants, they were blind to the specific goals of the research. Thirty-five per cent of subjects ( $N=18$ ) were coded independently by two coders, randomly paired across the subjects from the group of three coders, to compute reliability. The average Cohen's kappa was  $k=0.90$ .

### Questionnaire Data

Mothers responded to a brief questionnaire in which we obtained information about the infant's gender, family annual income, country of ancestry of the mother (for Hispanics only) and religion. These were categorized into dichotomous variables as follows: gender (male ( $N=30$ ), female ( $N=22$ )), income (low,  $< \$25\,000/\text{year}$  ( $N=22$ ), middle,  $> \$25\,000/\text{year}$  ( $N=30$ )), country of

Table 1. Types of touch

Category	Comments
No touch	No physical contact
Close touch	Resting against mother, body contact, body against body, tight hugs, baby's head against mother
Affectionate touch	Gentle touches with hand or mouth, face against face, kisses
Close affectionate touch	Close and affectionate contact at the same time
Distal touch	Such as playing at a distance or at arm's length, holding baby's hands with extended arms or baby standing on mother with extended arms
Unobservable or indeterminate	No visible contact

ancestry (for Hispanics only: Central America ( $N=11$ ), South America ( $N=15$ )) and religion (Mormon-LDS ( $N=25$ ), non-Mormon ( $N=27$ )). Furthermore, the breakdown of income  $\times$  culture was reasonably equally divided. In the low-income group, 12 were Anglo and 10 Hispanic. In the middle income group, 14 were Anglo and 16 Hispanic.

Three questions asked mothers to rate the amount and type of physical contact with their infants. Frequency of touch was judged by asking if the mother had physical contact with the infant on a daily basis (1=all the time, 2=very often, 3=occasionally, 4=not very often). Amount of affection<sup>1</sup> was judged by asking mothers to judge their affectionate contact with the infants (1=too affectionate, 2=very affectionate, 3=moderately affectionate, 4=not very affectionate). Per cent close touch was judged by asking mothers to rate the percentage of time in which their touching of the infant was expressed by close touch (skin-to-skin, e.g. touching faces or bodies) compared to distal touch (at arm's length, without facial or body contact).

<sup>1</sup>The inclusion of item 1, 'too affectionate', was based on the personal experiences of the first author. As a Hispanic-American, she has found that Hispanic mothers often feel too affectionate after comparing themselves to Anglo-Americans that they have observed. It is a possible reflection of being different in this regard from the majority culture.

### Analysis

To compare the Hispanic and Anglo cultures a series of two-way ANOVAs were carried out for each of the dependent variables from the questionnaire (frequency of touch, amount of affection, per cent close touch and per cent distal touch) and from the coding of the videotapes (the total duration over the 15-minute observation period, in seconds, scored for each of the coding categories listed in Table 1). One of the ANOVA factors was always culture (Anglo, Hispanic) and the other factor was either infant gender, family income, country of ancestry or religion. To control for a study-wide error rate, an individual ANOVA significance level of 0.01 was used.

### RESULTS

Tables 2 and 3 summarize the results' major findings for each of the dependent variables and for both Anglo and Hispanic cultures. There were no significant effects for gender, nor any significant gender  $\times$  culture interactions. A similar pattern emerged for the other background variables. There were no significant main or interaction effects for religion or ancestry (the latter was tested only within the Hispanic group).

Because income is a potential confound in the comparison of Hispanic and Anglo culture, we examined the findings for this variable in some detail. Results showed that there were no significant main effects for income, nor were there any significant income  $\times$  culture interaction effects. Furthermore, when the level of income was covaried, the results for culture were unchanged. Because the sample was reasonably equally

Table 2. Results from the questionnaire comparison of Hispanic and Anglo cultures

Category	Culture				F-values
	Hispanic		Anglo		
	Mean	(SD)	Mean	(SD)	
Frequency of touch	1.31	(0.47)	2.00	(0.49)	25.14*
Amount of affection	1.38	(0.50)	2.08	(0.39)	36.63*
Per cent close touch	84.81	(14.32)	55.38	(15.09)	52.73*

\* $p < 0.01$ ; lower scores on frequency of touch and amount of affection reflect that mothers gave a higher rating for the value of touch or affection.

Table 3. Results of the videotape coding comparison of Hispanic and Anglo mothers on touching infants. Numbers in the table represent the total duration of a category (in seconds) during the 15-minute observation period

Category	Culture				F main effects
	Hispanic		Anglo		
	Mean	(SD)	Mean	(SD)	
No touch	58.82	(67.62)	115.58	(110.86)	4.36
Close touch	487.00	(169.46)	249.56	(154.62)	24.24*
Affectionate touch	11.15	(15.80)	23.72	(23.00)	4.05
Close affectionate touch	143.17	(144.50)	45.93	(42.41)	9.51*
Distal touch	191.83	(170.98)	458.31	(175.49)	26.79*

\* $p < 0.01$ .

divided by income and culture, we can have confidence in the analysis. Since gender, income, religion and ancestry were not significant factors, we removed them from further analysis.

Culture emerged as the only significant predictor of touch and the pattern of findings was similar for both the questionnaire and videotaped data. In all cases, the findings revealed more close and affectionate contact for Hispanic compared to Anglo mothers.

For the questionnaire data, both Hispanic and Anglo mothers indicated that they had considerable daily contact with their infants. Anglo mothers were most likely to rate frequency of touch as 'very often', while Hispanic mothers were more likely to say 'all the time'. Regarding amount of affection, both groups were high, although Anglo mothers were most likely to report that they were 'very affectionate' and Hispanic mothers were more likely to say that they were 'too affectionate'. Even larger differences emerged for the percentage ratings for close and distal contact. With respect to per cent close contact, Hispanic mothers said they had close (skin-to-skin) touch 85% of the time (compared to distal contact) while Anglo mothers reported close contact only 55% of the time.

For the videotaped observations, a similar pattern of findings emerged. The duration of no touch for Anglo compared to Hispanic dyads was not significantly different. Since the no touch percentage is just 100 minus the per cent of total touching, the findings show that mothers in both groups touched their infants equal amounts of time,

and indeed mothers and infants in both cultures touched their infants for most of the 15-min observation session (93% of the session for the Hispanic dyads, 87% of the session for the Anglo dyads).

Significant differences between the two groups emerged, however, in the type of touching that was observed. Close touch and close affectionate touch were significantly higher in Hispanic dyads. Hispanic mothers showed close touch for twice as long as Anglo mothers, and displayed close affectionate touch almost three times as much, for an average total of 2.5 minutes of the 15-minute observation session. There were no significant differences for affectionate touch. Touching for Anglo mothers was more than twice as likely to be expressed as distal touch compared to Hispanic mothers.

Finally, we examined the pattern of correlations between the questionnaire and videotape variables separately for each cultural group. There were relatively few significant correlations, perhaps reflecting a relatively small sample size. The correlations that reached significance, however, were supportive of the overall pattern of findings. For Anglo mothers, there was a significant correlation between amount of affection (questionnaire) and close affectionate touch (video) of  $r=0.42$  ( $p<0.05$ ) and also distal touch (video) of  $r=-0.42$  ( $p<0.05$ ). Anglo mothers who said they were more affectionate (who scored lower on the questionnaire) were observed to show more distal touch and less close affectionate touch. For Hispanic mothers, the only significant correlations were between per cent close touch (questionnaire) and no touch (video) of  $r=-0.50$  ( $p<0.01$ ) and also close touch (video) of  $r=0.44$  ( $p<0.05$ ). Hispanic mothers who said they had a higher per cent of close touch were observed to have a lower duration of no touch and a higher duration of close touch. Thus, an Anglo mother who thought herself more affectionate displayed this with distal touch, while a Hispanic mother who considered herself affectionate displayed this with close touch.

## DISCUSSION

This study compared the amount of mother-infant touch in Hispanic-American and Anglo-American cultures. From questionnaire data we found that Hispanic and Anglo mothers both touch their infants on a daily basis, although Hispanic mothers report touching more frequently, being more

affectionate with their infants and having more skin-to-skin contact. From videotaped observations we found that there were no overall differences in the duration of mother-infant touch between the two cultures; however, the Hispanic mothers showed more close touch and more close and affectionate touch compared to Anglo mothers, who showed more distal touch.

Only 15 minutes of videotaped observation data was sufficient to confirm the mother's reports from the questionnaire. Culture-related patterns of touch clearly distinguished mothers and infants. The Anglo mothers' pattern of touch was more likely to be at a distance and with extended arms, while Hispanics were more likely to have closer physical contact, such as contact of body against body and hugs. The results are quite striking, even to casual observers of the videotapes. The Hispanic mothers were more likely to lie down on the floor, hold their infants on their stomachs or chests, kiss, hug and rock them. Anglo mothers were more likely to sit upright, playing more distal games and touching the baby from a distance.

The patterns of mother-infant touch are consistent with other dimensions of cultural differences between Anglo and Hispanic cultures, such as the communal and relational emphasis in Hispanic culture. Also, similar to findings on patterns of cultural differences in adults, cultural differences were strong even after the effects of income were covaried and there were no main or interaction effects of income.

Since Hispanic culture is known to be more communal in its orientation, it may be that touch is one way to establish close ties between individuals and de-emphasize an individualistic value orientation. Our research shows that these culturally different communication styles emerge early in infancy, as part of the ways in which mothers and infants express affection through touch. With an increasingly large population of Hispanic Americans, knowledge of such differences may be important for future intercultural communication. More research is needed, however, in order to trace how these early patterns of touch are related to parental child-rearing beliefs.

We need to show caution in the interpretation of these findings. We did not compare infant development in the country of origin of these two cultures, nor did we look at individual differences in infant behaviour as a function of individual differences in mother-infant touch within the cultures. We did laboratory rather than home observations. Furthermore, we did not do a

longitudinal study. Beckwith (1984) reported that Hispanic low-income mothers in California interact more responsively with their infant boys than with infant girls, while the opposite pattern is found for Anglo mothers. However, in that study, there were only low-income mothers with pre-term infants and the age at which this pattern appears is not clear from the data reported in the paper. In any case, more research is needed to investigate the reasons for the relatively equal amounts of affection and close touch towards both male and female infants seen in our sample. Thus, we cannot make any inferences about the value of touch for infant development based on these data alone.

Our results show that the overall amount of touching is roughly equal in the two cultures: both cultures show a very high percentage of mother-infant touch. Clearly touch is recognized by the majority of mothers as an essential ingredient of early communication with infants, even in cultures that are very different in their overall attitudes about touching and affection. Future research needs to focus on the relative implications of close vs distal touch for the development of the mother-infant relationship and for infant developmental outcomes.

## ACKNOWLEDGEMENTS

The authors would like to thank Hans G. Despain, Chikako Nakama, Kimberly Poulson, Andrea Valotta, Jennifer Webster and Randy Webster. This study was funded in part by a grant to Alan Fogel from the National Institute of Mental Health (R01 MH48680).

## REFERENCES

- Ainsworth, M., Blehar, M. C., Waters, E. and Wall, S. (1978). *Patterns of Attachment*. Hillsdale, NJ: Erlbaum.
- Alvarado, C. (1967). *Changing Values of the Puerto Rican Culture*. Rio Piedras: Universidad de Puerto Rico.
- Alvarez-Burgos, E. (1972). *Self Determination in Social Work Practice in Puerto Rico: Its Relation to Value Orientation Within a Culture*. Rio Piedras: University of Puerto Rico.
- Anisfeld, E., Casper, V., Nozyce, M. and Cunningham, N. (1990). Does infant carrying promote attachment? An experimental study of the effects of increased physical contact on the development of attachment. *Child Development*, 61, 1617-1627.
- Archilla, O. S. (1985). Families in Puerto Rico: an analysis of the socialization process from a macrostructural perspective. In J. Roopnarine and D. B. Carter (Eds), *Parent-Child Socialization in Diverse Cultures*. (NJ: Ablex, pp. 159-171.
- Ardilla-Espinel, A. N. (1982). Criterios y valores de la cultura Anglo-Saxo-Americana y de la cultura Latina: sus implicaciones para la psicología transcultural (Criteria and values of Anglo-Saxon and Latin cultures: their implications for a transcultural psychology). *Revista Latinoamericana de Psicología*, 14(1), 63-79.
- Beckwith, L. (1984). Parent interaction with their preterm infants and later mental development. *Early Child Development and Care*, 16, 27-40.
- Berry, J. W. (1983). The sociogenesis of social sciences: an analysis of the cultural relativity of social psychology. In B. Bain (Ed.), *The Sociogenesis of Language and Human Conduct*. New York: Plenum, pp. 449-454.
- Bornstein, M. H. (1990). *Cultural Approaches to Parenting*. Hillsdale, NJ: Erlbaum.
- Coopersmith, S. (1967). *The Antecedents of Self-Esteem*. San Francisco, CA: Freeman.
- Endsley, R. C. and Bradbard, M. R. (1981). *Quality Day Care: A Handbook of Choices for Parents and Caregivers*. Englewood Cliffs, NJ: Prentice-Hall.
- Field, T. (1981). Persistence of play and feeding interaction differences in three Miami cultures. In K. MacDonald (Ed.), *Parent-Child Play: Descriptions and Implications*. Albany, NY: University of New York Press, pp. 331-334.
- Field, T. and Widmayer, S. (1981). Mother-infant interactions among lower SES Black, Cuban, Puerto Rican, and South American immigrants. In T. Field, A. Sostek, P. Vietze and A. H. Leiderman (Eds), *Culture and Early Interactions*. Hillsdale, NJ: Erlbaum, pp. 41-62.
- Hales, D. J., Lozoff, B., Sosa, R. and Kennell, J. H. (1977). Defining the limits of the maternal sensitive period. *Developmental Medicine and Child Neurology*, 19, 454-461.
- Harlow, H. F. (1958). The nature of love. *American Psychologist*, 13, 673-685.
- Hans, T. and Clifford, R. M. (1980). *Early Childhood Environment Rating Scale*. NY: Teachers College Press.
- Hopkins, B. and Westra, T. (1988). Maternal handling and motor development: an intracultural study. *Genetic, Social, and General Psychology Monographs*, 114, 377-408.
- Hyson, M. C., Whitehead, L. C. and Prudhoe, C. M. (1988). Influences on attitudes toward physical affection between adults and children. *Early Childhood Research Quarterly*, 3, 55-75.
- Kennedy, S., Scheirer, J. and Rogers, A. (1984). The price of success—our monocultural science. *American Psychologist*, 39, 996-997.
- Kisileusle, S. B., Stack, M. D. and Muir, W. D. (1991). Fetal and infant response to tactile stimulation. *Newborn Attention*, 3, 63-92.
- Klaus, M. and Kennell, J. (Eds) (1976). *Mother-Infant Bonding: The Impact of Early Separation or Loss on Family Development*. St Louis, MO: C. V. Mosby.
- Lozoff, B. and Brittenham, G. (1979). Infant care: cache or carry. *Journal of Pediatrics*, 95, 478-483.
- Lucca-Irizarry, N. and Pacheco-Maldonado, A. M. (1989). Metas para la crianza en dos generaciones de madres Puertorriqueñas: implicaciones para la terapia familiar. (Goals for child rearing in two generations of Puerto Rican mothers: implications for family therapy). *Revista Interamericana de Psicología*, 23, 83-102.



- Mahler, M. S., Pine, R. and Bergman, A. (1975). *The Psychological Birth of the Human Infant*. New York: Basic Books.
- Moghaddam, F. M. (1987). Psychology in three worlds. *American Psychologist*, *42*, 912–920.
- National Academy of Early Childhood Programs (1984). *Accreditation Criteria and Procedures*. Washington, DC: National Association for the Education of Young Children.
- Negy, C. (1993). Anglo- and Hispanic-Americans' performance on the Family Attitude Scale and its implications for improving measurements of acculturation. *Psychological Reports*, *73*, 1211–1217.
- Prescott, E., Jones, E. and Kirtcheusky, S. (1972). *Day Care as a Child-Rearing Environment*. Washington, DC: National Association for the Education of Young Children.
- Reite, M. D. (1990). Touch, attachment, and health: is there a relationship? In K. E. Barnard and T. B. Brazelton (Eds), *Touch: The Foundation of Experience*. Madison, CT: International Universities Press, pp. 195–225.
- Rose, A. S. (1990). Perception and cognition in preterm infants: the sense of touch. In K. E. Barnard and T. B. Brazelton (Eds), *Touch: The Foundation of Experience*. Madison, CT: International Universities Press, pp. 299–323.
- Russell, R. (1984). Psychology in its world context. *American Psychologist*, *39*, 1017–1025.
- Samuels, C. A., Scholz, K. and Edmundson, S. (1992). The effects of baby bath and massage by fathers on the family system: the Sunraysia Australia intervention project. *Early Development and Parenting*, *1*, 39–49.
- Scarr, S. (1984). *Mother Care/Other Care*. New York: Basic Books.
- Scheper-Hughes, N. (1984). Infant mortality and infant care: cultural and economic constraints on nurturing in Northeast Brazil. *Social Science and Medicine*, *19*, 535–546.
- Segall, M. H. (1986). Culture and behavior: psychology in global perspective. *Annual Review of Psychology*, *37*, 523–564.
- Sexton, V. S. and Misiak, H. (1984). American psychologists and psychology abroad. *American Psychologist*, *39*, 1026–1031.
- Stack, D. M. and Muir, D. W. (1992). Adult tactile stimulation during face-to-face interactions modulates five-month-olds' affect and attention. *Child Development*, *63*, 1509–1525.
- Trenathan, R. W. (1988). First conversations. *Journal of Cross Cultural Psychology*, *19*, 65–67.
- Triandis, H. C. (1980). The self and social behavior in differing cultural contexts. *Psychological Review*, *46*, 506–520.
- Zahn-Waxler, C., Radke-Yarrow, M. and King, R. M. (1979). Child rearing and children's prosocial initiations toward victims of distress. *Child Development*, *50*, 319–330.