

Sociocultural Factors and Perinatal Development of Baganda Infants: The Precocity Issue

Author: Kilbride, Janet E, PhD; Kilbride, Philip L, PhD

Publication info: Pre- and Peri-natal Psychology Journal 4. 4 (Summer 1990): 281-300.

[ProQuest document link](#)

Abstract: None available.

Full Text: Headnote ABSTRACT: Infant development among the Baganda of Uganda is discussed from a sociocultural perspective. Cross-cultural examples which illustrate cultural effects on infant behavior are presented. In particular, the area of sensorimotor development is examined by means of a social survey, direct observations and formal testing during the Muganda infant's first six or eight months of life. The pattern of advancement found supports the view that parental values and childcare behaviors influence rate of infant sensorimotor development. The issue of "African infant precocity" is discussed in terms of the importance of sociocultural factors on infant development. The pre- and peri-natal development of infants is, in part, a cultural phenomenon. We take culture to be those standards for behavior that members of a given society share and learn through interaction with others of that social group. Such standards are learned through a process of enculturation which was first defined by Herskovitz (1948:39-42) as the means by which an individual learns, throughout the lifespan, to achieve competence in his or her culture. This process involves both conscious and unconscious conditioning. The closely related process of socialization has been equated sometimes with or differentiated from enculturation (see Schwartz, 1975). An important distinction is Margaret Mead's reference to socialization as a set of species-wide requirements made on human beings by human societies and to enculturation as a process of learning a specific culture in its uniqueness (1963:187). Cultural standards once acquired become themselves a basis for social action or behavioral outcomes and material productions. Several important properties of culture include the fact that it is learned; it is coterminous with a social group; and it is transmitted from generation to generation. Our position that infant development is in part a cultural phenomenon is not, of course, based exclusively on our own field experiences. We can claim no such originality for ourselves. Perhaps, we can claim some good judgment in following the collective wisdom of other thinkers who have studied infancy from a cultural perspective (e.g., Barry & Paxson, 1971; Leiderman, Tulkin & Rosenfeld, 1977; Munroe, Munroe & Whiting, 1981). For those specifically interested in child development, two basic questions concerning culture can be posed. First, how is what children learn affected by those symbolic systems constituting their society's culture? Secondly, how early in life does a person begin to behave in a culturally-patterned fashion? We turn now to a brief consideration of the culture concept with specific attention to these questions. In this discussion, we shall consider some studies which have demonstrated cultural effects on infant behavior. Considerable empirical evidence has accumulated which shows that cultural standards, embodied in such things as, for example, household arrangements, marital patterns, nutritional practices, religious and philosophical codes, influence the patterning of child development (see Whiting & Whiting, 1975). Data have emerged which strongly indicate that infant behavior is powerfully affected by cultural factors. For example, ethnographic descriptions of childhood in various cultural situations suggest that the belief of the adults concerning the capabilities of infants to learn from training, as well as the adult's desire to encourage or discourage psychomotor skills, not only influence adult behavior towards infants but also affect the behavior displayed by the infants themselves. The Six Cultures project explored in some detail the relationship between early training and infant behavior (see Whiting, Child & Lambert, 1966). In the Gusii community of Kenya studied by LeVine and LeVine (1966), motor skills are not a source of pride for parents nor of reward for infants. Specifically, children are not encouraged to walk early because of the possible dangers which the walking child might encounter. In fact, there is a Gusii proverb, "Lameness is up," which refers to a walking child being injured so badly that he becomes lame. Nevertheless, children are encouraged to walk before their mothers give birth

to their next children, and the LeVines report that most Gusii children can walk before they are two years old (1966:128). The Rajput infant of India spends the first months of life on a cot covered completely by quilts and sheets. Infants are given little attention outside of meeting their physical needs. Even the latter is doubtful since a mother may sometimes give her infant opium to quiet the child if she is extremely busy. The older infants have little opportunity to crawl or walk since they are carried on the hips of their caretakers when they are not lying down. Unfortunately, no mention is made of the age of attainment of motor skills by these infants (cf. Minturn and Hitchcock, 1966). According to Romney and Romney (1966), Mixtecan infants from Mexico receive much affection and physical contact from their mothers or female caretakers, but little opportunity for physical movement. When not held, the infant, for the first ten months, is placed in a hanging cradle and is wrapped lightly in a cotton cloth from the armpits down. As a result, infants are usually very quiet and not very active physically (cf. p 101). Romney and Romney also report that Mixtecan infants are not held over the shoulder to be burped until they are about four months old because it is believed to be dangerous to hold children in this way before they can hold up their own heads. One must also handle the infant very carefully to avoid injuring the backbone which is considered to be very weak (cf. p 98). Contrast this to the Okinawan infant who is strapped to his caretaker's back from the time he is a month old until shortly before the birth of the next baby, when he is about two years old. Maretski and Maretski (1966) describe an Okinawan grandmother's walking about the village with her infant grandchild on her back while "the infant's head bobs up and down, forward and back precariously, but it continues to sleep undisturbed" (p 98). The New England infant is encouraged and praised for being physically active and somewhat noisy but is given little opportunity to interact socially with a variety of people outside the immediate family. Fischer and Fischer (1966) describe the infant's social interactions as being of brief duration lest the baby lapse into antisocial behavior or become overly tired. It is also believed that too much social attention can "spoil" the child. This is a very different early social environment than that experienced by the Philippine infant who is continually faced with smiling, attentive visitors and family members who all desire to hold the baby. Nydegger and Nydegger (1966) describe the Tarongan infant as exhibiting greater passivity toward the environment than American children but displaying greater pleasure in sociable interaction with others of any age (cf. p 129). Research by Caudill and Weinstein (1969) and Caudill (1973) provides evidence that suggests that maternal caretaking styles influence infant behavior even as early as the first few months of life. A significant positive correlation ($\rho = .80$) was found between infant behaviors and maternal caretaking styles. Three-to-four month old American babies whose mothers did more "lively chatting" to them were found to respond with significantly greater amounts of happy vocalizations and gross motor activity than a matched sample of Japanese infants. In contrast, Japanese mothers who did more vocal lulling, carrying, and rocking of their infants had more physically passive babies. In a follow-up study, Caudill and Frost (1972) compared the maternal care and infant behavior of Japanese-American, American, and Japanese families. They also observed the behavior of third generation Japanese-American mothers and their infants and found it to be more similar to that of American than to that of Japanese mothers and infants. Some of their behavior, nevertheless, showed cultural persistence as well as cultural change. Thus, by the age of three to four months, these Japanese, Japanese-American, and American infants were behaving in culturally distinctive ways related to culturally constituted differences in maternal caretaking styles. Caudill (1973) states that the American cultural values of physical and verbal assertiveness and the Japanese values of physical and verbal restraints are concordant with the observed responses of the infants being raised in each of these respective cultures (cf. p. 70). Zinacanteco infants from highland Chiapas in southeastern Mexico have been tested and observed from birth through nine months of age. Based on neonatal observations (i.e., a neurological-behavioral evaluation), psychomotor tests of infants aged one month through nine months, and 12 four-hour observations, Brazelton, Robey, and Collier (1969) concluded that the quiet, alert neonates and the quieting, maternal childcare practices of the Zinacanteco Indians were well-suited to each other. They state: The belly cinch, the rebozo, covered faces, and frequent breast feedings produce imitative, non-exploratory

infants who develop in a slightly delayed (about 1 month) but parallel fashion to infants in the United States in motor, mental and social parameters ... This different, but nurturing environment, produces strong, adequate imitative children who may show subtle differences from North American children in cognitive tasks but who seem well adapted to their society's emphasis on conformity, (p. 292) Our own conviction concerning the importance of cultural factors (variables) has been enforced over the past decade by our experience and study within a nonwestern society in Uganda, East Africa, that of the Baganda of Uganda. Our original interest in this specific social group derived from the unexpected discovery made first by Marcelle Geber (e.g. 1956) concerning what has become known as the issue of "African infant precocity" (see Knobloch, 1958; Super, 1981; Warren, 1972; Wober, 1975). Dr. Geber, a French pediatrician, went to Uganda in order to investigate the problem of Kwashiorkor which was especially prevalent among the Baganda because of their tradition of feeding newly-weaned infants a high carbohydrate, low protein diet. In order to assess the influence of kwashiorkor on Ugandan infant development, Geber tested "normal infants" by means of the Gesell Scales (Gesell & Amatruda, 1934). In so doing, she discovered that these infants were advanced in their sensorimotor development in comparison to European infants. Thus, a potentially new phenomenon had been discovered, one that if replicable and verifiable had important implications for maturational and learning theories of human development. Accordingly, the present authors' first fieldtrip to Uganda in 1967 was undertaken, in part, to investigate the existence of this phenomenon. In this research, we discovered that Baganda babies were, as Geber reported, comparatively advanced, particularly during the first year of life. We also noted that Baganda babies were reared in some ways that were quite different from western practices. Infants, for example, are carried on their mothers' backs, massaged, and otherwise receive a great deal of physical handling, practices that reasonably might account for rapid sensorimotor development. Thus in 1972, we returned to Uganda to further explore infant development with an eye to gathering observational and ethnographic material on pregnancy, parenting values, childrearing practices and infant behavior. We decided to concentrate our study on the first six months of life, that period for which advancement was the most marked. In particular, we intended to collect "emic" or Kiganda views of infancy and infant development. Overall, this work provided considerable evidence that infant development in Buganda is, to a great extent, a matter of culturally-constituted experience.

THEORETICAL PERSPECTIVES AND METHODOLOGY EMPLOYED While recognizing the existence and importance of biological influences on behavior, the authors' theoretical orientation is based upon one of the major tenets of learning theory: behavior is modified by contact with environmental events. Though used frequently in studies of child development, the term "environment" has generally referred to objects (including people) and events in the child's physical presence regardless of whether these have actual or potential relevance for any of the child's behaviors. In general, the theoretical-methodological approach employed in our study of Baganda infants was that of a "functional analysis" of behavior. In a functional analysis, the child's environment consists of events which could affect his behavior (cf. Gewirtz, 1971:174). "The functional environment is comprised of stimulus events which can control behavior by evoking it, signaling occasions for its occurrence, and strengthening or weakening it" (Gewirtz, 1968:170). Thus, we were concerned with identifying not only the type and frequency of environmental events (i.e., mother's behavior) which are part of the infant's sociocultural experience but also with identifying the functional, learning contingencies provided to Baganda infants by their caretakers and the resultant infant behaviors manifested. Depending upon one's theoretical orientation, different aspects of the infant's environment would be conceptualized. Our focus of observation might differ, for example, if our theoretical orientation had been psychoanalytical rather than behavioral. Following Yarrow's (1963) suggestion, we chose to examine the care of the infant in terms of discrete variables (e.g., physical contact, restrictions on movement, social stimulation) rather than in terms of broadly defined childrearing practices where the specific stimuli affecting the infant are unclear (e.g., methods of feeding, weaning, and toilet training). Indeed Yarrow, Pederson and Rubenstein (1977), who are psychologists, have suggested that anthropological studies that rely mainly on describing global variables of the environment

in portraying the "normative child" and the "modal mother" rarely mention the range of variations within a given culture (cf. p. 558). Nevertheless, they also recognize that concentrating only on those specific childcare practices which are apparently related to specific infant behaviors provides one with an incomplete picture of the infant's behavior. It ignores the meanings of the behavior in terms of the larger cultural context. We believe that our own research efforts have benefitted by the sharing of disciplinary strengths (i.e., cross-cultural psychology and psychological anthropology). Anthropological or cross-contextual understanding has been derived from repeated visits to Uganda beginning in 1967, when we first lived with the Baganda. During our initial six-month stay, we investigated a number of issues related to cognitive and perceptual development, including infant motor development (cf. Robbins & Kilbride, 1974). Several hundred infants were formally tested, and we began informally to obtain information concerning infant care practices. Philip Kilbride benefitted from two additional three-month visits in 1969 and 1970 where, in the context of his general ethnographic inquiries, he was able to increase his knowledge of Luganda and of Kiganda culture. In June, 1972, we returned to Uganda for 11 months to do a longitudinal study of Baganda, sensorimotor development during the first six-months of life, a period during which our earlier research had indicated they were strikingly advanced. We also investigated childcare practices and mother-infant interaction patterns for clues to sources of this advancement. Our earlier studies had led us to hypothesize that certain Kiganda childcare practices might be importantly related to the Muganda infant's advanced sensorimotor development. Accordingly, during this extended stay, Janet Kilbride undertook the psychological testing and formal observations of the infants. Both of us pooled our knowledge in order to construct a prenatal and childrearing expectations questionnaire and a household survey instrument for assessing the social and economic condition of those homes in our sample. We both continued our informal relationships with Baganda parents and their children, an experience which provided an invaluable source of knowledge about adult values and childrearing practices. A major use of formal research is to establish the range of behavior or "variance" pertaining to any particular insight or discovery accruing from informal inquiry. For instance, as part of a larger study of pregnancy, infancy, and childhood, we discovered that women, but not men, sometimes consume soil (geophagy). A specific survey on soil eating later revealed that geophagy is particularly common during pregnancy and that women less frequently ingest soil when not pregnant. On another occasion, after acquiring some impressions concerning the high degree to which infants were valued by adult Baganda, we constructed a number of specific questions and topics about which literate Baganda wrote essays. The oral responses of non-literate Baganda were recorded by the researchers or their assistants. Through this formal procedure we gained not only ethnographic information but also discovered that while both men and women desire children they do not necessarily do so for the same reasons. It is clear that variation exists within any society such that not all individuals conform to those normative patterns that are operationally defined by the ethnographer to be "cultural." Indeed, much controversy centers on precisely how much "shared" behavior ever exists in a society. In other words, is culture a "replication of uniformity" or an "organization of diversity" (Wallace, 1961). For our purposes, culture technically includes all approved behaviors thought possible within a society irrespective of how many individuals actually practice such behaviors. In actuality, however, most cultural practices turn out to be what "most" people desire, do, or think is proper behavior. Among the Baganda, for example, it is an acceptable possibility to be a polygamist although most men are not. Polygamy, is therefore, a cultural standard even though it is not a common practice. On the other hand, although there are some Baganda who do not, most Baganda do eat steamed plaintain (matooke) in the evening. Eating matooke is, therefore, both an approved behavior and a probable cultural practice. Importantly, behavioral variation within a society permits the investigator to make comparisons between those who "do" something and those who "do not," or those who do it to differing degrees, to determine how such behaviors are related to other behaviors or experiences. In our own study, we were able to observe Baganda mothers who participated to varying degrees in culturally prescribed enculturation techniques. In general, however, the domain of enculturation in Baganda is quite conservative with many pre-modern beliefs and practices still

observable among parents who are otherwise quite modern. ASSESSMENT INSTRUMENT, TESTING PROCEDURES, AND SAMPLES Now that we have discussed the more general ways in which we acquired information concerning Kiganda culture and infant care practices, we will explain in more detail the specific techniques used during our 1967 and 1972-73 studies of Baganda, infant sensorimotor development. The Baganda were chosen for study because previous research has found that Baganda infants are advanced in their rate of sensorimotor development in comparison to Euro-American infants (e.g., Ainsworth, 1967; Geber, 1958; Kilbride, Robbins & Kilbride, 1970). Kilbride (1973), using the Bayley Scale of Infant Motor Development (Bayley, 1969), tested 163 Baganda infants aged 1 month through 2 years. Developmental Motor Quotients (DMQs) ranged from 92-145 with a mean of 123 (SD = 15.54), median of 123, mode of 124. It was suggested that socialization, especially childcare practices, might be importantly related to the Muganda infant's rapid motor development. Both Geber (1958; 1960) and Ainsworth (1967) have suggested that some possible causes for the precocity might be: 1) acceptance, love, indulgence, and lack of frustration afforded the infant; 2) breastfeeding on demand; 3) free exploration of the home environment; 4) social stimulation, and 5) visual-motor stimulation resulting from being carried in a sling on the mother's back. However, no systematic research was undertaken by them to investigate the relationship between specific Kiganda childcare practices and specific sensorimotor skills. The Population The Baganda, numbering about two million people, live in the province of Buganda, a former interlacustrine Bantu kingdom in Uganda. A previous British protectorate, Uganda has been independent since 1962. Located on the northwestern side of Lake Victoria, Buganda is a fertile area with much vegetation and a climate of the tropical savanna or modified equatorial variety. Rainfall is sufficient to allow the growing of crops throughout the year; thus, there is little need for food storage. Most Baganda are cultivators whose main subsistence crops are plantains, sweet potatoes, yams, and cassava. Their main cash crops include coffee, tea, and cotton. Both males and females clear the land, but the primary responsibility for cultivating subsistence crops lies with Baganda women and sometimes hired porters (abapakasi). Men usually take part in commercial farming, trading, fishing, and other wage-earning occupations. In the towns and cities, both men and women work at a variety of salaried jobs (e.g., salesperson, bank teller, teacher, typist, taxi driver, barmaid, etc.). Rural homes, located among banana groves, are usually made of wattle-and-daub and have thatched or corrugated iron roofs. Most homes are rectangular in shape and contain several rooms. The homes of more affluent farmers are constructed of cement and have tile roofs. Some homes have electricity and running water, but most rural homes have no electricity; water must be fetched from a well or collected when it rains. Urban homes are typically of concrete with corrugated iron or tiled roofs. They contain electricity, indoor plumbing, an indoor kitchen, and toilet facilities. In general, the homes are much like any Western home. The social organization of Kiganda society allows for achieved social mobility (for detailed descriptions see Fallers, 1964; Goldschmidt, 1965; Roscoe, 1911). Kiganda society is extremely patricentric as seen by patrilineal clans, rules of inheritance and succession, and by male dominance in political, economic, and social situations. Traditionally, and to a large extent presently, the father expected and received ingratiating deference from his wife and children, who knelt while greeting him in a high-pitched voice that was considered to be respectful. Polygamy, although not very common today, is still the prerogative of wealthy and successful men. Marriages have been, and continue to be, somewhat unstable. Presently, education and urban residence and employment provide some women with economic independence. Research Sample Based primarily on responses to a prenatal and childrearing expectations questionnaire administered to 50 Baganda women in their last trimester of pregnancy, 12 mothers were selected for study. An average of one, hour-long, continuous observation was recorded weekly or biweekly for each mother-infant dyad in their own home by J. Kilbride and a Muganda research assistant. Since one mother had dizygotic twins (male, female), the sample consisted of 12 mothers and their 13 infants (4 males, 9 females, 7 first-borns, 6 later-borns). Overall, there was a total of 107 hours of observation made, beginning in most cases, during the infant's first week of life and continuing for six or eight months. Inter-observer reliability ranged from 92-100 percent. Informal observations and unstructured

interviews were also made periodically concerning nutrition, child training practices, or any other needed information about childcare or the infant's health. The sensorimotor development of each infant was assessed monthly using the Bayley Scales of Infant Mental and Motor Development, BSID (Bayley, 1969).

Postcategorization of Behavior After all observations were made, codes were developed as a means of organizing the observed behaviors into categories which could be related to infants' overall scores on the BSID, as well as to individual items. Placing behaviors in categories results in the loss of some details because each behavior must be equated with every other behavior in a category. Nevertheless, it is necessary to quantify and to summarize observations in order to make them manageable and meaningful. The five categories of behavior to be discussed in the present paper are: 1. Restrictions on infant's movements (coded as present or absent for each five minute observation period when infant is awake). 2. Position of infant, prone, supine, or side, when lying down (coded for each five-minute observation period). 3. Method of lifting infant and place to which lifted. For example, an infant may be lifted using one or two hands with or without support for the infant's head. 4. Infant seated with or without support and place to which seated (code each time this occurs). 5. Presence or absence of human physical contact (code for each five-minute observation period). Mean inter-coder reliability was 93.2% (SD = 4.9) for 2 infants across all five categories.

RESULTS Rate of Mental and Motor Development Baganda infants were found to be advanced in both motor and mental development in comparison to the United States infants in Bayley's standardization sample. Bayley's developmental index is a standard score having a mean of 100 and a standard deviation of 16. For Baganda infants aged 2 through 10 months, the mean developmental indexes are 131 (SD = 15.3) for the motor scale and 131 (SD = 16.0) for the mental scale. Another basis for comparison between Baganda and United States infants involves comparing the median ages at which they pass each test item. The mean difference between the two groups is .54 months for the mental items and .99 months for the motor items. A t-test for related measures yielded a $t(77) = 7.941$, $p < .001$, for the mental items and a $t(35) = 8.816$, $p < .001$, for the motor items. A t-test for independent samples revealed that the .99 month advancement on the motor scale is significantly greater than the .54 month advancement on the mental scale, $t(112) = 2.675$, $p < .001$.

Pattern of Baganda Sensorimotor Development The Baganda infant's advanced rate of development is not evident in all sensorimotor skills. Instead, there is a pattern to this advancement with some areas of behavior advanced and others similar to the American infant's rate of development. The sensorimotor skills assessed by Bayley's scales were divided into 13 areas of behavior (see Kilbride, 1969, 1973 for specific items), and the mean age placement norms of Baganda and American infants for each of these areas were determined. A comparison of Baganda and American performance on each of the specified sensorimotor areas by means of t-tests for correlated samples revealed that Baganda infants are significantly advanced on 6 of the 13 sensorimotor areas assessed (see Table 1). These areas are: sitting skills, visual skills, social behavior, grasping and manipulative skills; prewalking skills, and auditory skills. No significant differences are found in the areas of: vocalization; prone behavior; supine behavior; fine-prehension skills; cause-effect exploratory behavior; and object permanence. Postural and head control shows a marginally significant difference; however, Baganda infants were not tested until one month of age, and three of the six head control items have age placement norms below one month of age. The rate of development for head control is, therefore, probably underestimated.

Table 1
Comparisons Between Baganda Infants and American Infants for Selected Sensorimotor Areas of Development

<i>Sensorimotor Area</i>	<i>No. of Items</i>	<i>Mean Difference</i>	<i>SD</i>	<i>df</i>	<i>t-value</i>
Vocalizations	6	.67	.87	5	1.879
Sitting	8	1.06	.30	7	9.925****
Visual	15	.37	.37	14	3.862***
Social	8	1.14	1.27	7	2.545**
Head Control	4	1.06	.76	3	2.787*
Manipulative	28	.71	.61	27	6.150****
Prone	2	-.40	.71	1	<1
Supine	4	.64	.57	3	2.232
Prewalking	9	1.05	.58	8	5.440****
Auditory	6	.70	.56	5	3.069**
Fine Prehension	4	.28	.25	3	2.240
Cause-Effect	10	.47	.88	9	1.689
Object Permanence	7	.50	1.52	6	<1

* .05 < p < .10.
 ** p < .05.
 *** p < .01.
 **** p < .001.

Childcare Practices and Sensorimotor Development A review of the experimental literature and previous research among the Baganda led to the expectation that there would be a relationship between Baganda childcare practices and the sensorimotor behavior of Baganda infants. Since the direction of the relationship was predicted, directional, one-sided or one-tailed test of significance were used in all of the remaining analyses. If, as it is hypothesized, the observed differences in rates of development for various sensorimotor behaviors are predominantly due to environmental factors, one might expect to find intracultural relationships between specific childcare practices and specific sensorimotor behaviors. The following relationships were found between specific maternal behaviors and infant sensorimotor skills. 1. Frequently placing the infant in a supine position (i.e., on his back) is positively and significantly related to early performance of grasping and manipulative behaviors ($\rho = .94, p = .01$). 2. A high frequency of physical contact between caretaker and infant is found to be positively and significantly related to advanced motor ($\rho = .51, p < .05$) and mental development ($\rho = .50, p < .05$) as well as early visual development ($\rho = .51, .05 < p < .10; \mu = 0, p = .014$). 3. The practice of frequently lifting the infant to the shoulder is positively and significantly related to early performance of visual behaviors ($\rho = .57, p < .05$). 4. The practice of "training" the infant to sit by placing cloths around the child for support is positively related to the early performance of sitting (see Kilbride and Kilbride, 1975). DISCUSSION Three major conclusions can be derived from the findings of the present study. First, Baganda infants are advanced in their rate of both mental and motor development in comparison to American infants. The advancement is greater for Bayley's motor skills than for her mental skills. A previous cross-sectional study by Kilbride (1969) of 53 Baganda infants, aged 2 to 8 months, reported a mean developmental motor index of 128 (SD = 11.33). This is remarkably similar to the mean Psychomotor Development Index of 130 (SD = 11.45) obtained by our 1973 longitudinal sample of Baganda coevals. Secondly, it was discovered that the precocity is not equally evident in all sensorimotor areas. Instead, there is a pattern to the Baganda infants' sensorimotor development with some areas of behavior advanced and others similar to American infants in rate of development. Baganda infants are advanced in sitting skills, visual skills, social skills, grasping and manipulative skills, prewalking skills and auditory skills. No significant differences exist in vocalizations, prone behavior, supine behavior, fine-prehension skills, cause-effect exploratory behavior, and object permanence. Postural and head control showed a marginally significant difference; however, Baganda infants

were not tested until 1 month of age, and three of the six head control items have age placement norms below 1 month. The rate of development for head control was, therefore, probably underestimated since the author's observations of Baganda infants showed good head control as early as the first week of life. In addition, the remarkable head control of Baganda infants has been reported by both Geber (1958) and Warren (1972). Thus, it is possible that prenatal and/or genetic factors may be important for understanding this particular area of advancement. Finally, an examination of intracultural variation in childcare practices and caretaker-infant interaction patterns suggests that the observed differences in rates of development for the various sensorimotor behaviors are predominantly related to socio-environmental or experiential factors. The relationships found are as follows. A significant, positive relationship was found between the childcare practice of placing the infant in a supine position and the early performance of grasping and manipulative skills. Those Baganda infants who are more frequently placed on their backs rather than in other positions are more advanced in grasping-manipulative behaviors. Francis-Williams and Yule (1967) found that English infants were in advance of American norms in tasks involving mid-line skills such as banging two cubes together. They suggested that this relative advancement may be related to the supine position in which most infants are placed in their cots instead of the prone position in which most American infants are typically placed and stated that future cross-cultural studies were needed to provide evidence for this relationship. The present research has discovered such a relationship among the Baganda. The practice of lifting the infant to the shoulder is positively related to the early performance of visual behaviors as measured by the Bayley scales. This finding that Baganda infants who are more frequently lifted to their caretakers' shoulders are more advanced on visual behaviors than Baganda infants who are less frequently lifted to the shoulder is similar to the finding of Korner and Grobstein (1966). They reported that when crying newborns were soothed by being picked up to the shoulder, they not only stopped crying but became more visually alert and scanned their environments significantly more than when they lay on their backs without intervention or when they were held upright in a sitting position. Another experiential factor which the present study found to be related to visual behavior is the frequency of physical contact between the infant and his caretaker. Baganda infants who experience a high frequency of physical contact with their caretakers are more advanced in their visual behavior than Baganda infants experiencing less frequent contact. Several other studies have also discovered a relationship between contact or handling and infant visual behaviors (e.g., White & Castle, 1964). Lewis and Goldberg (1969) found significant positive correlations between maternal holding, maternal touching, and visual behavior, in this case, response decrement to a blinking light. LeVine (1960) found that handling infant rats resulted in a more rapid rate of development. He reported that "They open their eyes earlier and achieve motor coordination sooner" (1960:85). Thus, as Korner and Grobstein (1966) have suggested, early stimulation occurring through the visual modality may be activated through tactile stimulation. It has been suggested that Baganda infants' advanced rate of sensorimotor development might, in part, be related to the large amount of physical contact between caretaker and infant (e.g., Ainsworth, 1977). In the present sample of Baganda infants, the mean percentage of physical contact between caretakers and infants is 52.7% (SD = 8.4). Moss (1967) reports that American infants at three weeks of age are held 49.3% of the time observed, but by 3 months of age this has declined to 33.4%. Baganda infants show a similar, but lesser decline from approximately 58.0% to 46.0%. It should be noted, however, that at each age physical contact is greater for the Baganda. These figures suggest that Baganda infants receive more physical contact than American infants. Konner (1977) reports that the !Kung San of northwestern Botswana who are advanced in certain motor skills also receive relatively much physical contact with their caretakers. He also presents examples from other cultures and suggests that physical contact may be a phenomenon more characteristic of nonindustrialized than industrialized societies. If we accept these differences in amount of physical contact, then the question arises as to whether there is any evidence that physical contact between caretaker and infant has a facilitatory effect on sensorimotor development. Looking at mean percentages of physical contact and mean development quotients, one finds that a high frequency of

physical contact is positively and significantly related to both advanced motor development and advanced mental development. Similarly, Yarrow, Pederson, and Rubenstein (1977), in their observations of 5- to 6-month old American Black infants, found that the amount of kinesthetic stimulation the infant received was significantly correlated with the Bayley Psychomotor Development Index ($r = .36$) and the Mental Development Index ($r = .41$). Yarrow (1963), in a previous observational study of the relationship between maternal care during the first 6 months of life and infant characteristics at 6 months, found significant positive correlations between physical contact and IQ ($r = .57$) handling stress ($r = .53$), exploratory manipulative behavior ($r = .48$) and social initiative ($r = .50$). The findings of the present study provide further evidence, in a naturalistic setting from another culture, for the importance of physical contact to infant sensorimotor development. Williams and Scott (1953), in their study of 104 American Black infants between 4 and 18 months of age, found a significant positive relationship between the amount of freedom the infants had in moving about their homes and their motor development as measured by Gesell development schedules. Ainsworth (1977), studying American infants in the Baltimore area, reported a significant correlation of .56 between amount of floor freedom permitted the infant and DQ on the Griffiths' scale in the fourth quarter of the first year of life. For the present sample of Baganda infants, however, no significant relationship was found between the infants' freedom to explore their home surroundings without being confined to a crib, basket, or pram top and motor or mental development. Perhaps this type of restriction is not "functionally" (cf. Gewirtz, 1968) a restriction until the infant is old enough to crawl about; since most of our Baganda infants had not yet begun to crawl, their movements may not actually have been restricted. Another possible interpretation is related to the finding that most Baganda mothers impose few restrictions on their infants' movements; thus, all infants in the sample may have experienced an adequate or greater amount of freedom. Four of the 13 infants were never observed in a restricted situation as it has been operationally defined. In fact, the median percentage of no restrictions on our Baganda infants' movements throughout their first seven months of life was 89% (range = 61% - 99%). Although no intracultural relationship was obtained, it is still possible that the relative freedom that Baganda infants have to explore their milieu may be greater than that of American infants and may contribute in some fashion to the advanced sensorimotor development which was found for Baganda infants in comparison to American infants. Baganda infants who are trained to sit achieved the various sitting skills on the Bayley test about one month earlier than American infants. This finding has been discussed in detail elsewhere so it will not be elaborated upon here (Kilbride & Kilbride, 1975). Further support for the influence of training on sitting behavior comes from Super's (1973) finding that Kipsigis infants from Kenya, who are trained to sit in a fashion similar to that of the Baganda, are also approximately one month advanced in sitting behaviors in comparison to Bayley's American norms. Interestingly, most Baganda do not train their infants to crawl nor do they frequently place their infants in a prone position, and Baganda are about one month behind American infants in this area. Super (1973) reports a similar relationship among the Kipsigis. SUMMARY In general, it may be concluded that Baganda infants are not precocious in all sensorimotor areas but show a pattern of advancement in some areas and no advancement in other areas. The specific areas of advancement can, for the most part, be related to specific Kiganda childcare practices and caretaker-infant interaction patterns. Thus, the advancement appears to be best explained by predominantly cultural factors. Those favoring a genetic explanation for this precocity (e.g., Freedman, 1979; Jensen, 1969) should be asked to explain why the pattern of precocity appears to match the cultural practices. The importance the Baganda place on early learning is attested to in one of their proverbs: Akakyama amamera: tehadolekeka (That which is bent at the onset of its growth is almost impossible to straighten at a later age). Adult values and childcare practices most certainly play an important role in infant development. Such influence is particularly evident when one considers certain negative consequences on child development associated with the modernization process in East Africa. Elsewhere we have described the increasing emergence in modern times of such things as infant malnutrition, child abuse and neglect, and infanticide (Kilbride & Kilbride, 1990). In that study we consider how "children of value" are nowadays

understood as "at risk." The primary environmental problem for such risk is economic change less favorable to women and children compared to premodern agrarian practices. This essay describes certain positive, behavioral consequences for infants "of value" who have experienced primarily a traditional socialization experience derived from premodern times but still widely evident today.

References

Ainsworth, M.D. (1967) *Infancy in Uganda: Infant Care and the Growth of Love*. Baltimore: Johns Hopkins Press.

Ainsworth, M.D. (1977) *Infant Development and Mother-Infant Interaction Among Uganda and American Families*. *Culture and Infancy: Variations in the Human Experience*, (ed.) P.H. Leiderman, S. Tulkin, and A. Rosen. New York: Academic Press.

Barry, H. III and L.M. Paxson (1971) *Infancy and Early Childhood: Cross-Cultural Codes 2*. *Ethnology* 10:466-508.

Bayley, N. (1969) *Manual for the Bayley Scales of Infant Development*. New York: The Psychological Corporation.

Brazelton, T.B., J.S. Robey, and G. Collier (1969) *Infant Development in the Zinacanteco Indians of Southern Mexico*. *Pediatrics*, 44:274-290.

Caudill, W. (1973) *Psychiatry and Anthropology: The Individual and His Nexus*. *Cultural Illness and Health: Essays in Human Adaptation, Anthropological Studies*, 9, (eds.) L. Nader and T.W. Maretzki. Washington, D.C.: American Anthropological Association.

Caudill, W. and L. Frost (1972) *A Comparison of Maternal Care and Infant Behavior in Japanese-American, American and Japanese Families*. *Influences on Human Development*, (ed.) U. Bronfenbrenner. Hinsdale, Ill.: Dryden.

Caudill, W. and H. Weinstein (1969) *Maternal Care and Infant Behavior in Japan and America*. *Psychiatry* 32:12-43.

Fallers, L.A. ed. (1964) *The King's Men: Leadership and Status in Buganda on the Eve of Independence*. London: Oxford University Press.

Fischer, J.L. and A. Fischer (1966) *The New Englanders of Orchard Town USA*. *Six Cultures Series (Vol V)*. New York: John Wiley.

Francis-Williams, J. and W. Yule (1967) *The Bayley Infant Scales of Mental and Motor Development: An Exploratory Study with an English Sample*. *Developmental Medicine and Child Neurology* 9:391-401.

Freedman, D.G. (1979) *Human Sociobiology: A Holistic Approach*. New York: Free Press.

Geber, M. (1956) *Développement Psycho-moteur de L'enfant Africain*. *Courrier* VI:17-29.

Geber, M. (1960) *Problèmes Posés par le Développement du Jeune Enfant Africain en Fonction de Son Milieu Social*. *Le Travail Humain* 23:97-111.

Geber, M. (1958) *The Psycho-motor Development of African Children in the First Year and the Influence of Maternal Behavior*. *The Journal of Social Psychology* 47:185-195.

Gesell, A. and C.S. Amatruda (1934) *Developmental Diagnosis of Normal and Abnormal Child Development: Clinical Methods and Practical Application*. New York: McGrawHill.

Gewirtz, J.L. (1968) *On Designing the Functional Environment of the Child to Facilitate Behavioral Development*. *Early Child Care: The New Perspectives*, (ed.) L.L. Dittmann. New York: Atherton Press.

Gewirtz, J.L. (1971) *Stimulation, Learning and Motivation: Principles for Day-Care Settings*. *Day Care: Resources for Decisions*, (ed.) E.E. Grotberg. Washington, D.C.: U.S. Government Printing Office.

Goldschmidt, W. (1965) *Review of L.A. Fallers, The King's Men: Leadership and Status in Buganda on the Eve of Independence*. *American Anthropologist* 67:785-788.

Herskovitz, M.J. (1948) *Man and His Works*. New York: Alfred A. Knopf.

Jensen, A.R. (1969) *How Much Can We Boost IQ and Scholastic Achievement?* *Harvard Educational Review* XXXIX:1-123.

Kilbride, J.E. (1969) *The Motor Development of Rural Baganda Infants*. Unpublished M.A. Thesis. State College: The Pennsylvania State University.

Kilbride, J.E. (1973) *The Motor Development of Rural Baganda Infants*. Kampala, Uganda: Makerere Institute of Social Research.

Kilbride, J.E. and P.L. Kilbride (1975) *Sitting and Smiling Behavior of Baganda Infants: The Influence of Culturally Constituted Experience*. *Journal of Cross-Cultural Psychology* 6:88-107.

Kilbride, J.E., M.C. Robbins, and P.L. Kilbride (1970) *The Comparative Motor Development of Baganda, American White and American Black Infants*. *American Anthropologist* 72:1422-1428.

Kilbride, P.L. and J.E. Kilbride (1990) *Changing Family Life in East Africa: Women and Children at Risk*. University Park: The Pennsylvania State University Press.

Knobloch, H. (1958) *Precocity of African Children*. *Letter to the Editor*. *Pediatrics* 22:601-603.

Konner, M. (1977) *Infancy Among the Kalahari Desert San*. *Culture and Infancy: Variations in the Human Experience*, (eds.) P.H. Leiderman, S.R. Tulkin, and A. Rosenfeld. New York: Academic Press.

Korner, A.F. and R. Grobstein (1966) *Visual Alertness as Related to Soothing in Neonates: Implications for Maternal Stimulation and Early*

Deprivation. *Child Development* 37:867-876. Leiderman, H.P., S.R. Tulkin, and A. Rosenfeld (1977) *Culture and Infancy: Variations in the Human Experience*. New York: Academic Press, Inc. LeVine, R.A. and B.B. Levine (1966) *Nyasongo: A Gusii Community in Kenya*, Six Cultures Series, Volume II. New York: John Wiley. LeVine, S. (1960) Stimulation in Infancy. *Scientific American* 202:81-86. Lewis, M. and S. Goldberg (1969) Perceptual-Cognitive Development in Infancy: A Generalized Expectancy Model as a Function of the Mother-Infant Interaction. *Merrill-Palmer Quarterly* 15:81-100. Maretski, T.W. and H. Maretski (1966). *Taira: An Okinawan Village*. Six Cultures Series Volume VII. New York: John Wiley. Mead, M. (1963) Socialization and Enculturation. *Current Anthropology* 4:184-188. Minturn, L. and J.T. Hitchcock (1966) *The Rajputs of Khalapur, India*. Six Cultures Series Volume VIII. New York: John Wiley. Moss, H.A. (1967) Sex, Age and State as Determinants of Mother-Infant Interaction. *Merrill-Palmer Quarterly* 13:19-36. Munroe, R.H., R.L. Munroe, and B.B. Whiting, eds. (1981) *Handbook of Cross-Cultural Human Development*. New York: Garland S.T.P.M. Press. Nydegger, W. and C. Nydegger (1966) *Tarong: An Ilocos Barrio in the Philippines*. Six Cultures Series Volume VI. New York: John Wiley. Robbins, M.C. and P.L. Kilbride, eds. (1974) *Psychocultural Change in Modern Buganda*. Kampala, Uganda: Nkanga Publications, Makerere Institute of Social Research. Romney, K. and R. Romney (1966) *The Mixtecans of Juxtlahuaca, Mexico*. Six Cultures Series Volume IV. New York: John Wiley. Roscoe, J. (1911) *The Baganda: An Account of Their Native Customs and Beliefs*. London: Macmillan. Schwartz, T. (1975) Introduction. *Ethos* 3:93-97. Super, CM. (1981) Behavioral Development in Infancy. *Handbook for Cross-Cultural Human Development*, (eds.) R.L. Munroe, R.H. Munroe, and B.B. Whiting. New York: Garland Press. Super, CM. (1973) Patterns of Infant Care and Motor Development in Kenya. *Kenya Education Review* 64-69. Wallace, A.F.C (1961) *Culture and Personality*. New York, Random House. Warren, N. (1972) African Infant Precocity. *Psychological Bulletin* 78:353-367. White, B.L. and P.W. Castle (1964) Visual Exploratory Behavior Following Postnatal Handling of Human Infants. *Perceptual and Motor Skills* 18:497-502. Whiting, B.B. and J.W.M. Whiting (1975) *Children of Six Cultures: A Psycho-Cultural Analysis*. Cambridge, MA: Harvard University Press. Whiting, J.W.M., J.L. Child, and W.W. Lambert (1966) *Field Guide for a Study of Socialization*. Six Cultures Series Volume I. New York: John Wiley. Williams, J.E. and R.B. Scott (1953) Development of Negro Infants: IV. Motor Development and its Relationship to Child Rearing in Two Groups of Negro Infants. *Child Development* 24:103-121. Wober, J.M. (1972) Infancy and Weaning in Africa; A Review. Occasional Paper, No. 14, *Social Psychology*. Kampala, Uganda: Makerere University, August. Yarrow, L.J. (1963) Research in Dimensions of Early Maternal Care. *Merrill-Palmer Quarterly* 9:101-114. Yarrow, L.J., F.A. Pederson, and J. Rubenstein (1977) Mother-Infant Interaction and Development in Infancy. *Culture and Infancy: Variations in the Human Experience*, (eds.) P.H. Leiderman, S. Tulkin, and A. Rosenfeld. New York: Academic Press. AuthorAffiliation Janet E. Kilbride, Ph.D. and Philip L. Kilbride, Ph.D. AuthorAffiliation Janet Kilbride is presently affiliated with the Philadelphia Geriatric Center, Behavioral Research, Philadelphia, Pennsylvania 19141, U.S.A. A past secretary/Treasurer of the Society for Cross-Cultural Research, she has published in psychological and anthropological journals on topics concerning infancy, socialization, and facial expression recognition. She has recently co-authored with Philip Kilbride, *Changing Family Life in East Africa: Women and Children at Risk*, University Park: The Pennsylvania State University Press, 1990. Philip Kilbride is a Professor of Anthropology at Bryn Mawr College. He has published on various topics including modernization, infancy, deviance, and visual perception. In addition to the above co-authored book with Janet Kilbride, he has edited with Jane Goodale and Elizabeth Ameisen, *To Know Thyself: Studies in American Ethnic Culture*, Tuscaloosa, University of Alabama Press (forthcoming). Requests for reprints should be sent to Dr. Philip Kilbride, Anthropology, Dalton Hall, Bryn Mawr College, Bryn Mawr, Pennsylvania 19010.

Publication title: Pre- and Peri-natal Psychology Journal

Volume: 4

Issue: 4

Pages: 281-300

Number of pages: 20

Publication year: 1990

Publication date: Summer 1990

Year: 1990

Publisher: Association for Pre&Perinatal Psychology and Health

Place of publication: New York

Country of publication: United States

Journal subject: Medical Sciences--Obstetrics And Gynecology, Psychology, Birth Control

ISSN: 08833095

Source type: Scholarly Journals

Language of publication: English

Document type: General Information

ProQuest document ID: 198776210

Document URL: <http://search.proquest.com/docview/198776210?accountid=36557>

Copyright: Copyright Association for Pre&Perinatal Psychology and Health Summer 1990

Last updated: 2010-06-06

Database: ProQuest Public Health

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