THE DEVELOPMENTAL NICHE: A CONCEPTUALIZATION AT THE INTERFACE OF CHILD AND CULTURE *

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Anthropological approaches to human development have been oriented primarily to the socialized adult, at the expense of understanding developmental processes. Developmental psychology, in contrast, has traditionally been concerned with a decontextualized, 'universal' child. After a brief historical review, the 'developmental niche' is introduced as a framework for examining the cultural structuring of child development. The developmental niche has three components: the physical and social settings in which the child lives; the customs of child care and child rearing; and the psychology of the caretakers. Homeostatic mechanisms tend to keep the three subsystems in harmony with each other and appropriate to the developmental level and individual characteristics of the child. Nevertheless, they have different relationships to other features of the larger environment and thus constitute somewhat independent routes of disequilibrium and change. Regularities within and among the subsystems, and thematic continuities and progressions across the niches of childhood provide material from which the child abstracts the social, affective, and cognitive rules of the culture. Examples are provided from research in a farming community in Kenya.

Research on human development has been shaped by two contrasting images. The first is of a single individual in a carefully controlled setting, demonstrating behaviors characteristic of a certain level or kind of functioning. Questions asked in this setting include: how do people like this perceive, think, or react? What is the structure of their intellectual abilities or the style of their affective regulation? How does this change from one age to another? The metaphor of development here is growth, an unfolding or emergence of structures and functions, a sequence of trans-

formations that belongs to our species and the laws of which can be discovered by detailed probing under laboratory conditions.

The second image is of a person richly attired in ceremonial garments and surrounded by friends and kin, behaving in a way unique to that particular setting and to the larger culture which creates it. The questions here are: why is this person doing this thing, and how did he or she learn to do it? How does the behavior fit with other aspects of the culture? What does it mean to the persons involved, and how did it come to mean that? The metaphor of development evoked by these questions is the molding by culture of human potential to the particular patterns of behavior that are adaptive in that context.

Each of these images has been associated with a field of academic inquiry. The 'universal' individual observed under special conditions has been the object of psychological research, from Wundt's brass-instrumented laboratory in Leipzig to Piaget's *methode clinique* and American experiments in cognitive development. The behavior of people in exotic cultures, on the other hand, has been the domain of anthropological study. Unlike the vertical theories of developmental psychology, anthropological theories have presented a horizontal panorama of human variation. To be sure, anthropological studies have drawn on psychological theory in attempts to formulate the links between culture and the individual, and psychological researchers have recently acknowledged that the laboratory is a cultural artifact embedded in socially regulated meanings (see Jahoda 1982; Harkness and Super in press). Nevertheless, the contrasting images continue to function in the creation and presentation of research on human development, and the integration of these metaphors is a continuing challenge.

In this essay, we briefly review some earlier formulations of the interface between culture and individual, and we then introduce the 'developmental niche', a set of concepts that is proving useful in research on culture and child development. The physical and social settings of everyday life, the customs of child care, and the psychology of caretakers are seen as three integrated subsystems of the niche, each with its own set of relations to the larger environment. Although not a formal theory in the classical sense, the developmental niche provides a framework for examining the effects of cultural features on child rearing in interaction with general developmental parameters. These ideas have been developed in the context of our work in East Africa, and we will draw on it to illustrate the major points.

Anthropological perspectives on human development

Culture. according to one major perspective in anthropology. resides in the individual mind; a theory of culture must therefore include how it gets there and how it functions there. From the time of Margaret Mead and Ruth Benedict. anthropologists have attempted to draw the relationships between cultural environments and the behavior of individuals within them. The most fully elaborated of these attempts is John Whiting's 'model for psycho-cultural research', which postulated that:

'(1) Features in the history of any society and in the natural environment in which it is situated influence

(2) the customary methods by which infants (and children) are.cared for in that society. which have

(3) enduring psychological and physiological effects on the members of that society. which are manifested in

(4) the cultural projective-expressive systems of the society and the physiques of its members' (J. Whiting 1981: 155).

As drawn in schematic form (e.g., J. Whiting 1977: 30), history and environment jointly influence the 'maintenance systems' of a society, which include the settlement patterns, economic base, division of labor, and household structure. From the maintenance system flow elements of the child's 'learning environment', the whole of socialization that leads to variation in adult psychological functioning. Aspects of adult personality as culturally formed can be inferred, finally, from the ways that they are culturally expressed or 'projected' in rituals or belief systems. Although Whiting explicitly acknowledges that other arrows of causality might reasonably be drawn (for example, expressive systems might influence child rearing techniques), research using this model generally follows the hypothesized causal lines, with much of it centered on describing elements of the learning environments of children in different cultures (see Munroe, Munroe and B. Whiting 1981).

The Whiting model was built on prevailing psychological theories of the 1940s and 1950s, as well as on the premise in functionalist anthropology that different domains of a culture are systematically and usefully related to each other. From psychology came the idea of personality as a set of enduring dispositions whose roots could be traced to early experience. Both Freudian theory and social learning theory were used

in formulating the links from individual experience to adult behavior as represented by rituals and beliefs. In addition, the model assumed that both methods of child rearing and projective systems were patterns of behavior and thought shared by many if not all members of the culture. This was, in anthropology, the 'culture and personality' approach to understanding the 'typical' or 'modal' personality of members of a culture.

More recently, some of the theoretical underpinnings of the Whiting model have been challenged. The usefulness of 'personality' as a construct, its roots in interpersonal experience, and the assumption of continuity over the life-span have all been strongly questioned by empirical research (Fiske 1974; Mischel 1968; Kagan and Klein 1973; Shweder 1979). At the same time, studies of individual people in different cultures have shown that, as Whiting himself has said, culture is orthogonal to personality, and the constructs that are useful for describing behavior at the group level do not seem to apply very well to the explanation of individual behavior. In addition, the linear assumptions of cause and effect, borrowed from social learning theory's experimental model, have been recognized as inadequate. LeVine (1970: 596–597) comments: 'Customs like child-rearing practices and the variety of cultural behavior patterns with which they have been hypothetically linked tend to be associated with many other customs, and these multiple associations lend themselves to a variety of interpretations, some of them sociological or ecological rather than psychological. In the welter of multiple connections...it is all to easy to find support of simple causal hypotheses by limiting one's investigation to a few variables rather than looking at the larger structure of relations in which they are embedded.'

The Whiting model stimulated, and over the years synthesized, a full generation of anthropological research on children and their caretakers. One of its fruits has been renewed thinking about the interface between individual development and its cultural context (see Harkness and Super in press). As anthropological understanding of this interface evolved from 'child training' (Whiting and Child 1953) to 'learning environments' (Whiting and Whiting 1975) to the 'acquisition of culture' (Schwartz 1981), developmental psychology was also revising its appreciation of the relationship, and we turn now to that history.

Psychology and the environment

The notion that development is influenced by the environment is about as old as the idea of development itself: in a trivial sense, environment in the form of 'stimuli' or even 'experience' has been a cornerstone of psychology since its earliest philosophical beginnings. But as the formal discipline of psychology was created to apply 'the scientific method' to understanding the human mind, the environment as an object of study was excluded. The new science of the mind sought universal laws, free of context, in the isolation of the laboratory. The child study movement, as it grew from collateral roots in the early part of this century (see Siegel and White 1982), was nutured by humanist, educational, interdisciplinary, and policy-oriented concerns as well as scientific ones. When it came to be firmly and broadly established in the acadamy in the two decades after World War II, however, it was transformed as 'developmental psychology', a logical-positivist, laboratory-based enterprise. It had fully incorporated psychology's dedication to the individual as the object of study (Cairns 1983; McCandless 1970; Super 1982).

Although the experimental paradigm has dominated the field of child development for several decades, a small but persistent tradition has always been concerned with the limitations of studying human behavior only in the laboratory. In its interdisciplinary origins it has connections to the work of Mead and other anthropologists, but it also includes observational work by psychologists: Dennis's (1940) research in a Hopi village, for example, and studies of the psychological ecology of growing up in the Midwest by Barker and Wright (1949). The latter was particularly inspired by Lewin's (1936) 'field theory' of behavior which incorporated both experimentation and non-laboratory locales.

Based to some degree on this tradition, there occurred in the mid-1970s a major shift within the field of developmental psychology concerning the role of the environment in development. Many exemplars of this shift could be cited, but we will review three major statements to indicate the breadth of theoretical reorientation.

McCall (1977), in one of the more widely applauded critiques of what was then modal work in developmental psychology, focused on inherent problems in the laboratory paradigm. 'Few studies', he wrote, 'are concerned with development as it transpires in naturalistic environments',

and he attributed the triviality of much research to excessive devotion to an experimental model that came 'to dictate rather than serve research questions' (1977: 333). Because it is neither practical nor ethical to manipulate essential aspects of human development, McCall concluded, laboratory research can never answer questions essential to the discipline.

A similar concern prompted Bronfenbrenner's (1979) frequently quoted statement that 'much of developmental psychology, as it now exists. is the science of the strange behavior of children in strange situations with strange adults for the briefest possible periods of time' (1979: 19). The major thrust of his ecological approach to child development is to expand both the methods and the vision of psychology beyond the individual as the exclusive focus of analysis. A child's environment can not be reduced to a single immediate setting containing the subject, Bronfenbrenner argued, for 'environmental events and conditions outside any immediate setting containing the person can have a profound influence on behavior and development within that setting ... for example (by) defining the meaning of the immediate situation to that person' (1979:18). Bronfenbrenner's (1979) scheme for dividing the child's environment into micro-, meso-, exo-, and macro-systems has proven widely influential as a framework for examining the 'environment' in a new way. One aspect of his approach especially relevant here is an emphasis on 'the progressive accommodation throughout the life span, between the growing human organism and the changing environments in which it lives and grows' (1977: 513).

Kessen's (1979) essay on 'the American child and other cultural inventions' and its subsequent elaborations (Kessel and Siegel 1983) present a philosophical and historical argument that complements McCall's critique of methodology and Bronfenbrenner's statement of theory. Our understandings of the nature of the child are too varying over time and too related to contemporary intellectual ambiance to permit any confident conclusions about 'the child'. In Kessen's words: 'If we were truly to recognize that the study of children is not exclusively or even mainly a scientific enterprise in the narrow sense [he means "experimental"], but stretches out toward philosophy and history and demography, if we were to recognize such an expanded definition of child study, we might anticipate a new (science) whose object of study is not the true child or my piece of the true child but the changing diversity of children' (Kessen 1983: 37–38). In short, Kessen's claim, like McCall's

and Bronfenbrenner's, is that child study of the previous decades did not use an adequate model of development and did not provide adequate tools for arriving at one. The appropriate object of study, he argues, is not the child but the child-in-context.

As the theoretical ferment of the 1970s centered on the nature and role of the developmental environment, it is not surprising to find also at that time a reconsideration of the models for the environment. Bron-fenbrenner and Crouter (1983) have presented an analysis of the theories of the environment hidden in the major theories of development, and correspondingly the 'latent paradigm shifts' concerning the environment that accompanied more overt changes in developmental theory. Until recently 'hidden' theories of the environment were the only kind avail-able in psychology because of the personological bias in the discipline (Harkness 1980) and, in fact, in Western culture generally (Shweder and Bourne 1982).

Bronfenbrenner's (1979) ecological model of the environment and its network of influences has already been briefly mentioned as one product of the new look at the context of development. A second, increasingly common approach is to see continuous, inductive aspects of the environ-ment as an 'epigenetic landscape' (e.g., Fishbein 1976; McCall 1981, Scarr-Salapatek 1976), borrowing the metaphor from Waddington's (1957) genetics and Spemann's (1938) embryology. Life-span and life-course approaches (e.g., Elder and Rockwell, 1979; Baltes 1979) repre-sent a third rethinking of the environment, while the application of general systems theory to human development combines some features of all these models (see Sander, Stechler, Burns and Lee 1979; Sameroff 1983; Sameroff and Chandler 1975).

In sum, developmental psychology underwent a fundamental change in its appreciation of the context of development in the 1970s. The limitations of a purely analytic, laboratory discipline were argued by a number of prominent authors, the validity of a developmental model based exclusively on the individual child was questioned, and fresh theories blossomed quickly from a variety of historical roots in order to represent psychology's new insights.

The developmental niche

The concept of the developmental niche lies at the juncture of the theoretical concerns in psychology and anthropology outlined above,

and it attempts to capture important features from both disciplines. The recent models of the environment for development. however. do not generally acknowledge its cultural structuring. even though this may be the most important aspect of human ecology. On the other hand, anthropological approaches to culture and human development have been excessively oriented to the 'final product' in adulthood rather than focusing on developmental processes throughout the life-span. The developmental niche. in response, is a theoretical framework for studying cultural regulation of the micro-environment of the child, and it attempts to describe this environment from the point of view of the child in order to understand processes of development and acquisition of culture.

The developmental niche has three major subsystems which operate together as a larger system and each of which operates conditionally with other features of the culture. The three components are: (1) the physical and social settings in which the child lives; (2) culturally regulated customs of child care and child rearing; and (3) the psychology of the caretakers. These three subsystems share the common function of mediating the individual's developmental experience within the larger culture. Regularities in the subsystems, as well as thematic continuities from one culturally defined developmental stage to the next. provide material from which the child abstracts the social, affective, and cognitive rules of the culture, much as the rules of grammar are abstracted from the regularities of the speech environment. The three components of the developmental niche form the cultural context of child development:

Physical and social settings

B. Whiting (1980) has pointed out that one of the most powerful ways culture influences child development is through providing the settings of daily life. The people who frequent the settings are seen as especially formative of social behaviors because they determine the kind of interactions children have the opportunity and the need to practice. Infants, for example. universally elicit nurturant acts from caretakers and others around them. Societal institutions such as formal schooling have a major effect on the age and sex of children's daily companions, and thus on the types of social interactions experienced. B. Whiting, Edwards, and their collaborators (1986) have recently compiled observational data

from a number of communities around the world to explore this function of culture.

In our research in Kokwet, a rural Kipsigis community of Kenya, we have examined relationships between the settings of children's everyday lives and various aspects of child development. Some of these studies reveal differences from Western norms in aspects of development that have been considered universal. For example, differences in sleep patterns between infants in Kokwet and in an urban American sample were related to differences in settings: whereas the Kokwet babies slept with their mothers and were never left alone during the day, the American babies generally slept in their own beds, often in a separate room, and they slept in separate, quiet places during the day as well. One result of these differences in physical settings and daily routines was that the Kokwet babies slept less, overall, than the American ones; they also continued to wake every few hours at night months after most American babies had begun to sleep for long periods (Super and Harkness 1982). Similarly, the percent of time an infant spent sitting (e.g., in a caretaker's lap) as opposed to lying down was found to be a factor in the speed at which the universal skill of sitting alone is acquired (Super 1976, 1981). The physical environment of mats, cribs, and/or chairs, combined with the social environment of caretakers and companions, structure the infant's opportunities for developing emerging behavioral potentials.

Another example of the power of settings in determining the development of apparently universal behaviors is in the domain of gender segregation in children's peer groups. Recent American research has established the tendency of boys and girls to associate preferentially with members of their own sex, and some effort has been oriented to documenting the exact onset of this behavior in the preschool years. In Kokwet, however, children from late infancy through middle childhood spent most of their time in mixed-age, mixed-sex groups of children from the same or neighboring households. The tendency for boys and girls to associate more with same-sex peers did not emerge until after the age of six, when they were considered old enough to leave their own homesteads to seek companions. Thus, it appears that the question of developmental trends in children's choice of companions cannot be addressed independently of the settings of their daily lives (Harkness and Super 1985b).

A salient aspect of child life in rural East African communities, as in many other cultures, is the extent to which children participate in the

work of the household. Age trends in work activities, contrasted to play or rest. illustrate this aspect of the physical and social settings of the children in Kokwet. Using several hundred 'family spot observations' which noted the activities and locations of all members of a household at different times of day, we assembled a composite picture of the main activities of children from infancy to age nine years in Kokwet. The category of 'work' included a long list of chores such as processing food. cooking and tending the fire. collecting firewood and bringing water, taking care of animals (mainly cows or sheep and goats). and caring for babies. 'Play' included both individual and social play, while 'rest' included sleeping. lying down. and sitting quietly alone or with others. Together. these three categories accounted for approximately 80 percent of the children's observations. with eating and school filling in most of the remainder (most children in Kokwet under the age of 10 years. however. did not attend school).

Analysis of the activities of children of different ages shows that at age two years, play occupied almost half the children's time while rest accounted for another 25 percent. However, the proportions of time spent in these different activities began to change rapidly toward participation in the household economy. By age four, children were observed almost equally often in play, rest, and work. By six or seven years, children were spending half their time in work activities while play and rest came to occupy minimal proportions of their days. The structuring of settings in terms of activities set the parameters for the kinds of social interactions which could take place within them, in much the same way as the cast of characters present also sets limits. In the case of Kokwet, playful interactions might occur within the context of carrying out household tasks such as watching the cows or caring for a younger sibling; but these play sequences were frequently punctuated by the demands of work (Harkness and Super 1986). In contrast to the middle class Western emphasis on play as central to young children's development, work was clearly the main task of childhood in Kokwet.

Customs of child care

Physical aspects of the setting can shape the growing child's experience, at the most basic level. through infectious pathogens and parasites that slow, alter, or terminate the processes of biological growth. Similarly the physical availability of adequate nutrients is critical. Virtually

all aspects of the physical setting, however, are mediated by cultural adaptations in child care practices. The presence, for example, of dangerous objects such as cooking fires, deep water, staircases, and large or poisonous animals will prompt accommodations in techniques of care, including closeness of supervision. Given the human and technological resources available, parents and other caretakers adapt the customs of child care to the ecological and cultural settings in which they live.

Customs as discussed here are sequences of behavior so commonly used by members of the community, and so thoroughly integrated into the larger culture, that they do not need individual rationalization and are not necessarily given conscious thought. Although at the group level they can be seen as adaptations to the larger environment or ways of coping with developmental issues, they are more likely to be regarded by members of a culture as the 'reasonable' or 'natural' thing to do. As such, these features of child rearing are not so much the immediate product of individual choice or personal disposition as they are community-wide solutions to recurrent issues in child rearing. Customs in this sense include not only routine tools for everyday living, such as where to put the baby, but also infrequent, complex, and institutionalized mechanisms such as adolescent circumcision rituals and sending children to school. From the point of view of the researcher, customs of child care can be seen as behavioral strategies for dealing with children of particular ages, in the context of particular environmental constraints.

Carrying an infant on the back, tied with a shawl or piece of cloth, is a customary method of infant care in many societies. Our spot observations in Kokwet show that backcarrying was rare in the first month of life but thereafter during the first year was used for 17 percent of the infant's daytime care. Initially much of the carrying was done by the mother, but by three months of age a sibling caretaker (typically a 7-year-old sister) had assumed more than 25 percent of the immediate handling of the baby. Reasons for carrying given by Kipsigis mothers and child caretakers when asked were to soothe the baby (through contact and rocking) and to keep him or her out of trouble. In addition, the infants were riding on the caretaker's hip or being held vertically in her arms for an additional 12 percent of the day.

There are a number of possible consequences for the infant, including the pattern of visual experience, social interaction, and physical exercise through bodily adjustments to the caretaker's movement (see Super 1981). In the latter case, experimental research has identified lasting

effects. Porter (1972) and Clark, Kreutzberg and Chee (1977), for example, introduced passive limb exercise and vestibular stimulation to normal American infants and demonstrated significantly increased physical growth and reflexive and gross motor development. Their limited interventions appear to be less than the routine difference between rural Kipsigis and urban American customs of care. Further, though perhaps of less significance, the increased time being held results in less time available for practicing prone and supine behaviors. Infants in Kokwet were observed to be lying down about 10 percent of their waking time compared to 30 percent in an urban American sample. This difference in the patterning of physical exercise is thought to contribute to the later emergence of crawling in Kokwet, just as greater experience with sitting and walking behaviors contributes to the Kipsigis infants' earlier accomplishment of these milestones (Super 1976, 1981).

Corresponding to the physical care that results in differential exercise, parents in Kokwet customarily and deliberately 'taught' their infants to sit and walk (but not to crawl). There were specific behavioral routines, with specific words to refer to them, that parents and siblings all knew and practiced on a nearly daily basis months before the skills were fully acquired by the baby.

Psychology of the caretakers

Although most child-rearing customs are accepted without critical examination, they are often accompanied by specific beliefs concerning their significance. Kipsigis parents believed that without specific teaching, infants' sitting and walking would be delayed or impaired (Super 1976, 1981); the belief did not extend to crawling. There are many beliefs and values that are regulated by the culture and that in turn regulate development of the child; we separate them, as the psychology of the caretakers, to be the third systematic feature of the developmental niche.

The psychology of the caretakers includes ethnotheories of child behavior and development as well as the commonly learned affective orientations which parents bring to their experience of parenting. Most important among the ethnotheories are beliefs concerning the nature and needs of children, parental and community goals for rearing, and caretaker beliefs about effective rearing techniques. Within constraints created by the physical environment, available technology, customs of child care, and the demands of parents' own activities, the psychology of

the caretakers organizes parental strategies of child rearing in both the immediate and the more long-term sense. For example, parents' assignments of their children to different settings expresses beliefs about the capabilities of children at different ages as well as parental goals for their children's development. The responses of parents and other caretakers to children's emotional displays also are directed by ideas, often implicit, about the development of the self in the context of the particular culture.

Caretaker psychology provides immediate structure to children's development through the meaning it invests in universal behaviors and processes. Even to the earliest behavior of newborns adults apply culturally relevant schemas of interpretation. We asked mothers in Kokwet and Boston to rate the similarity of various neonatal bahaviors included on the Neonatal Behavioral Assessment Scale (Brazelton 1973), and the results indicate that while mothers in both cultures used similar dimensions in making their responses, their emphasis differed (Super 1986b). A jerky sweep of the hand in response to an examiner's touch on the face, for example, was seen positively by Kipsigis mothers as reflecting responsive motor integrity (Dimension II), a sign of health and strength. A mother in Boston, in contrast, was more likely to weight her perception of the motion with concern over the disorganization implicit in the jerkiness, for controlled states of arousal (Dimension I) were the dominant organizing feature of American perceptions of the newborn. More generally, deVries and Super (1979) concluded on the basis of conducting neonatal examinations in the home that some cultures (Masai, Kikuyu, and Kipsigis in their study) assume infants to be 'fragile creatures, easily threatened by rough handling or overstimulation ... In contrast, the Digo appear to think of their babies as relatively hardy and not in need of special protection from physical distress' (1979: 95).

Mothers' beliefs were also evident in their approaches to child language socialization. In interviews about how children learn to talk, the Kokwet mothers generally expressed the view that children learned to talk more from each other than from the mothers themselves. Some of the mothers claimed they did nothing to enourage their children's language development, and among those who did, commands (which generally do not require a verbal response) were the most frequently mentioned type of language input. Naturalistic observations confirm the mothers' reports: by comparison with American studies, the frequency of the Kokwet mothers' speech to their two- to three-year-old children was remarkably low. We have suggested that this approach to child

language socialization in Kokwet reflects Kipsigis parental goals of training for obedience and responsibility rather than for verbally expressive individuality (Harkness and Super 1982).

The centrality of obedience and responsibility in Kipsigis parental theories was also demonstrated in our explorations of mothers' ideas of intelligence and personality in Kokwet (Super 1983). Discussions with a group of mothers in the community yielded a group of words and phrases that were commonly used in talking about children. Concepts referring to a child's helpfulness and obedience were the largest group among these. Another term, translated as 'intelligence' (*ng'om*), also carried a strong component of 'responsibility'. One informant illustrated the meaning as follows:

> 'For a girl who is *ng'om*, after eating she sweeps the house because she knows it should be done. Then she washes the dishes, looks for vegetables, and takes good care of the baby. When you come home, you feel pleased and say, "This child is *ng'om*." Another girl may not even clean her own dishes, but just go out and play, leaving the baby to cry. For a boy, if he is *ng'om*, he will watch the cows, and take them to the river without being told. He knows to separate the calves from the cows and he will fix the thorn fence when it is broken. The other boy will let the cows into the maize field and will be found playing while they eat the maize.'

Further investigations showed that while 'intelligence' was recognized as a verbal, social quality in the abstract, its most salient expression was in the domain of carrying out one's responsibilities at home (cf. Dasen, Barthelemy, Kan, Kouame, Daouda, Adjei and Assande 1985). In this context the ability to be helpful without being reminded by an adult emerged as an important marker of intelligence. Likewise, mothers in Kokwet stated that they felt they could make judgments of a child's personality at about the same age (five or six years) that they expected to be able to assign the child to run an errand to a nearby homestead or store (Super and Harkness 1983).

Culturally constructed theories such as these were important in parents' definitions of their children's developmental stage; and such definitions, in turn, were translated into parental assignments of their children to different physical and social settings. The concepts of obedience and responsibility were important not only for parents' judgments of their children's enduring qualities, but also in parental decisions about whether a child was 'old enough' to carry out culturally salient tasks, e.g., old enough to send on errands.

Three corollaries

We have borrowed the term 'niche' from biological ecology, where it is used to refer to an organism's place or function in a biosystem (the etymological origin is the same as 'nest'). There are three corollaries to be borrowed as well. (1) The three components of the niche operate in a coordinated manner. (2) Each component interacts differentially with other features of the larger ecology. (3) The organism and the niche are mutually adapted. It is noteworthy that these ideas are also represented to varying degrees in culture theory; that cultural components act as a coordinated system, in particular, has been a central concept in anthropological theory almost from its beginnings.

The niche as a system.   The three components of the developmental niche operate as a system with homeostatic mechanisms that promote consonance among them. This is particularly evident in the examples of motor and language development described above. The settings, customs, and caretaker psychology each dispose toward the same acquisition and socialization. It is through such reinforcing patterns that culture has its most powerful immediate influence.

Coordination in subsystems of the niche is also evident at times of successful transition in the child's culturally defined developmental status, for example the shift from infancy to early childhood. Like many other sub-Saharan peoples, the Kipsigis believed that having a younger sibling was an important element in the socialization of children. Last-born children, because they were never replaced by a new baby as the center of the family's indulgent attentions, tended to be 'spoiled' and difficult throughout life, it was thought, lacking in those qualities of obedience and responsibility which we have described above. For this reason, the arrival of a new baby was seen as the opportunity to implement a change of status for the second-to-youngest, which was expressed through changes in the settings and customs related to the child. While as an infant the child had slept at the mother's breast, he or she would now be moved to sleep at her back or perhaps with the other young children in a separate bed. This child would also no longer be carried by the mother, and would be considered old enough to be the junior member of a household play or chore group rather than being assigned to a child caretaker. We have documented the changes in the amount and

nature of adult attention which children received as a function of this culturally defined developmental change. as well as the changes in their daily activities (Harkness and Super 1983, 1986).

Subsystems of the niche and external systems.   Each of the three subsystems of the niche is also embedded, in different ways, in other aspects of the human ecology; the niche is an 'open system' in the formal sense (von Bertalanffy 1968). We have discussed some immediate effects of the physical setting above, but there are larger effects of the physical environment on various aspects of the niche. For example, the differences in infant carrying between Kokwet and Boston appear, in wider perspective, to be strongly influenced by climate. J. Whiting (1981: 175–176) concluded on the basis of a cross-cultural survey: 'The manner in which infants are cared for is to a considerable extent constrained by the physical environment, the temperature of the coldest month of the year being the most important factor. In cold climates infants tend to be carried in a cradle, swaddled, and put in a cradle to sleep. In warm climates they are usually carried in a sling or shawl, often nap on their caretaker's back, sleep next to their mothers at night, and are clothed lightly or not at all.' Similarly, the subsistence base of a society (agricultural vs hunting and gathering) has been related to the goals and techniques of socialization for independence and obedience (Barry, Child and Bacon 1958), that is particularly, in our terms, to the psychology of the caretakers and the parent–child interactions that derive therefrom. The concept of the development niche is designed, in part, to facilitate identification of the specific mechanisms that lie behind such large-scale, cross-cultural findings, and in so doing it reveals that the three components are differentially responsive to features of the larger culture and environment.

The connections are most evident under conditions of change, for any component of the niche can be a route of innovation and disequilibrium. In Kokwet, the introduction of free, government-sponsored schooling has affected the settings of daily life for school-age children and the younger siblings who have been their charges. The custom of adolescent circumcision has been affected by the strictures of Christian missionary churches in the area, and more recently by a Presidential order that female circumcision was to be disallowed altogether. Parental beliefs about parent–child relations have been affected by teachings of the churches and other sources of 'modern' thinking, with wide-ranging

effects that include language socialization (Harkness 1977) and family intimacy.

In order to understand local adaptations to these changes introduced from the outside, it is useful to refer back to the first corollary of homeostatic mechanisms promoting cultural consistency. When change is introduced through one of the subsystems of the developmental niche, the initial cultural response is likely to be 'conservative' in that attempts are made to preserve as many elements as possible of the subsystem affected, and the other two subsystems may not change at all. Thus in the example of schooling, child caretakers continued to be used for infant care in Kokwet, even though in theory there should have been fewer of them available. Mothers have overcome this potential shortage through using younger than ideal siblings as caretakers, enrolling some children in school later, or hiring children from other families. The parental theories of obedience and responsibility, central for traditional roles of children in Kipsigis society but probably less adaptive for success in school, continued to define children's developmental status and social identities.

Eventually, however, if consequences of changes grow and ripple through the system, the same forces of homeostasis that minimize the initial response will now bring the three subsystems of the niche into a new consonance. In the case of schooling in Kokwet, parents began to perceive the importance of education as a way to send children into the salaried economy and reduce pressure on the farm land. This fostered changes in the settings parents assigned their children to and their customary child care practices. Daily homework and year-end exam preparation have come to replace some chores and other traditional features of family life. The concept of *ng'om* has been elaborated to *ng'om en ga* ('intelligent at home') and *ng'om en sukul* ('intelligent at school'), child characteristics which were generally agreed to be uncorrelated. The frequent appearance of 'all or nothing' forms of culture change for children may be the joint result of the homeostatic and the differential linkage features of the developmental niche.

Mutual adaptation. Popular conceptions of adaptation have the organism adapting to the environment. Evolutionary biologists have found the relationship more problematic. Lewontin (1978), for example, agrees that as antelope and other hooved species migrate to new grasslands, selection may indeed, over time, effect their adaptation to the

niche. On the other hand. he points out. the animals also alter the grasses through the physical action of their feet. the biochemical action of their droppings. and of course their selective actions of consumption and seed dispersal. The niche adapts too. and the 'final' result. if there is one. is a mutual adaptation of organism and niche. a co-evolution of the individual–environment system.

The same mutuality occurs in the developmental niche. Certainly children 'adapt' to their environment: that is the basis of a full literature concerning environmental effects on child development. But there is also a complementary environmental adaptation. or more accurately. a co-evolution. At the level of individuals, this has received wide attention in the study of temperament and 'child effects on parental behavior' (Bell 1968; Thomas and Chess 1977). It is also evident in attempts to concep-tualize the individual and environment as a formal system (Sander et al. 1979; Sameroff 1983). More generally. however. species-wide character-istics of growth act to constrain the kinds of niches that work. Rogoff, Sellers, Pirrota, Fox. and White (1975) have drawn inferences about universal stages in development from similarities across cultures in the ages at which certain tasks and responsibilities are assigned to children. In a more limited study, we have found an age-related structure to children's social environments in Kokwet that is familiar to the Western eye. Despite some unique features, it seems to reflect environmental accommodation to the universal needs and abilities of different aged children (Harkness and Super 1983). There is a growing body of evi-dence on maturationally controlled shifts in children's cognitive and emotional characteristics (Kagan 1976, 1984; Konner 1982; Super 1972, in press), and these changes appear to be a critical element in the expectations and demands placed on children by parents and the com-munity.

Because of the multiple interconnectedness of elements of the niche with each other and with the larger environment, however, there are constraints on the ability of niches to adapt. For example, the daily schedules of American parents and their values regarding independence and autonomy make particularly troublesome an infant who is irregular in sleeping habits. This aspect of individual temperament is one factor in the classic 'difficult child syndrome' of Thomas and Chess (1977). In Kokwet, however, sleeping arrangements and the absence of institution-alized work schedules virtually eliminated sleep as a source of difficulty in caring for infants. On the other hand, the Kipsigis niche was not

easily able to deal with the baby who did not like being carried on the back. or who objected to being cared for by someone other than the mother. These two common features of infant care in Kokwet were too tightly connected to the mothers' work and the larger organization of family life to be very flexible in the absence of major reorganization (Super and Harkness 1981; Super 1986a).

Niches in development

The developmental niche of a child does not remain constant for long. In large part this is environmental accommodation to the growing individual. but the quality and timing of shifts in the niche bear the imprint of culture. Most importantly, there is a synergy to the sequence of niches that creates the most powerful long-term effects of culture on development.

Western theories of development, aside from the most extreme behaviorist position, locate discrete stages in psychological growth, a hierarchical, goal-oriented anologue to 'punctuated equilibrium' in evolutionary theory (Gould and Eldredge 1977, 1986). At the core of each stage is a common, age-related task, be it understanding object permanency (Piaget 1970). establishing basic trust (Erikson 1950), or resolving Oedipal issues (Freud 1956). There are important truths represented in such theories, but they overlook culturally specific themes that run across stages. One consequence of these larger themes is a subtle restatement of the task for any one stage in light of the transcendent issues.

In Kokwet, the values of obedience and responsibility provided a central theme of continuity in successive developmental niches of infancy and childhood. The sharing of infant care, the close proximity of infants to others, and the consequent necessity for the infant to adapt to the exigencies of other people's daily lives composed this lesson: you are part of a social group whose needs will shape your life from moment to moment, just as it will accommodate to your needs. The universal transition to early childhood took place with local goals and methods. The child was distanced from the mother's breast, back, and bed, stronger ties were developed with peers and older sibling caretakers, and the child began in the third year of life involvement in the household economy. The child learned about respect for elders and responsibilities to the

household. By six or seven years the child spent the majority of waking hours in productive and largely prosocial activities, but forged a new and generally positive relationship with the parents as a reliable helper in the tasks of the household. The acquisition of social responsibility was the criterion for adequate development, and its growth defined the beginnings, ends, and internal structuring of Kipsigis developmental stages.

This agenda for social behavioral development is intimately related to the themes of affective development. Unlike most middle-class American parents, parents in Kokwet did not customarily engage in negotiations with their infants or children over the regulation of emotion, sleep–wake patterns, or eating. Initially, infant care practices consisted of management by others of the infant's state. Signals of hunger, tiredness, or fussiness were responded to promptly for the restoration of equilibrium. Although this pattern of care is sometimes labeled indulgent, as might be appropriate for a European or American who used it, the local meaning was probably quite different: others, not the baby, are in charge of dealing with variations in the baby's physical and emotional state. The decrease in outside regulation as a Kipsigis child progressed to the early childhood niche could be difficult, but one theme remained constant: emotional perturbations were met with calming and distraction, not communication and elaboration with others. By middle childhood the focus was on what needs to be done, not on what the child felt like doing. The management of state in the individual became an accessory to the management of the social group as a whole. Short of physical symptoms of distress, variations in emotional state were not a focus of major concern to either caretakers or the child.

The 'affective–cognitive structures' (Izard 1978) developed by the child who moves through these niches necessarily reflects the meanings abstracted from them. As revealed by symoblic interpretations of line drawings (Harkness and Super 1985a), Kipsigis children have, by middle childhood, learned to experience a relatively calm state as positive. They are cautious with regard to a more 'agitated, excited' stimulus, universally labeled 'happy' by American adults and older children. As one Kipsigis explained, 'Being happy is when nothing is bothering you.' Even when responding to identical physical stimuli and using common words with broadly similar denotation, Kipsigis and Americans have constructed different systems of meaning, different affective–cognitive structures, from the scripts learned and relearned during childhood.

Our discussion so far has dealt with similarities in the content of themes across niches, but it is important to realize that the sequence of niches also regulates transitions. Thus what may appear to be a sudden break in societal demands may actually be a familiar and rehearsed transformation—metaphorically, an intra-dimensional rather than extra-dimensional shift (Kendler and Kendler 1967). The 'indulgent' niche of infancy and the strict prohibitions on crying at the time of adolescent circumcision are not inconsistent. Rather the surgical ceremony marks quite dramatically the transition from childhood to adulthood, a transition that has been prepared by all the previous niches. The change is a sharp one from an outside view, but for the Kipsigis child it is an important culmination of experience, tying together the central symbols of childhood and transforming one to an adult, a Kipsigis adult.

Summary and Conclusion

The developmental niche is a conceptualization at the interface of child and culture. It can serve as a framework for relating findings in the separate disciplines of psychology and anthropology, and for examining the mechanisms involved in the cultural regulation of child develop-ment. The three components of the developmental niche involved in this mediation are: (1) the physical and social settings in which the child lives; (2) the customs of child care and child rearing; and (3) the psychol-ogy of the caretakers. These three subsystems function with different relationships to other features of the larger culture and environment and thus they constitute somewhat independent routes of disequilibrium and innovation in the rearing of different cohorts of children. Nevertheless, homeostatic mechanisms tend to keep the three subsystems in harmony with each other and appropriate to the developmental level of the child. The settings, customs, and caretaker psychology share a common func-tion in organizing the individual's developmental experience. Regulari-ties within and among the subsystems, and thematic continuities and progressions across the niches of childhood provide material from which the child abstracts the social, affective, and cognitive rules of the culture.

Research on human development has been shaped by two central but contrasting metaphors. In psychology, human development has been viewed as a process of growth, of stage-like unfolding species-specific abilities. In anthropology, development has been viewed primarily as

learning, even as a process of molding from rather general potentials the culturally particular patterns of behavior and thought. The concept of the developmental niche represents an attempt to synthesize these two opposing metaphors, and it has drawn from several disciplines recent theories of the relationships between individual growth and its environmental context. The development niche is thus also a metaphor, in which the child and the culture are seen as mutually interactive systems. The usefulness of this metaphor for research lies in its delineation of aspects of the child's environment that have gone often unrecognized in psychology, while focusing on the processes of growth that are at the heart of developmental theory.

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