Anthropologica

FEATURE ARTICLES

BOOK REVIEWS/COMPTES RENDUS

Editorial Policy

Open to contributors from Canada and abroad, *Anthropologica* publishes, in French and English, articles and reviews in all areas of cultural and social anthropology. All manuscripts are refereed anonymously by two reviewers.

Politique éditoriale

La revue *Anthropologica* publie, en français et en anglais, des articles et comptes rendus produits par des chercheurs canadiens et étrangers oeuvrant dans les divers domaines de l'étude académique de l'anthropologie culturelle et sociale. Chaque manuscrit est soumis pour évaluation à deux lecteurs anonymes.

ANTHROPOLOGICA

CONTENTS/SOMMAIRE

BOOK REVIEWS / COMPTES RENDUS

THE ROOTS OF ENCULTURATION: THE CHALLENGE OF PRE- AND PERINATAL PSYCHOLOGY FOR ETHNOLOGICAL THEORY AND RESEARCH

Charles D. Laughlin[1]
Carleton University

Abstract: A central question for ethnological theory has been: At what age do human beings begin the process of enculturation? An important consideration in answering this question is the now ample evidence from various quarters that the perceptual/cognitive competence of the pre- and perinatal human being is significantly greater than was once thought. The purpose of this paper is to discuss the theoretical and methodological implications of this emerging picture of early competence for ethnology. To this end I will present a review of some of the developmental neuropsychological, psychobiological and social psychophysiological research indicating pre- and perinatal perceptual/cognitive competence and learning. I will then suggest some issues that this competence raises for ethnological theory and research.

Résumé: Une question centrale pour la théorie ethnologique a toujours été: A quel âge l'être humain commence-t-il le processus d'apprentissage culturel? Une importante considération dans la réponse à cette question se trouve être l'évidence, maintenant accumulée par differents secteurs, que la compétence perceptuelle et cognitive de l'être humain aux stages prénatals et périnatals est significativement plus étendue qu'on ne pensait. Le propos de cet article est de discuter les implications théoriques et méthodologiques, pour l'ethnologie, de ces nouvelles possibilités de compétence précoce. A cette fin, l'auteur présente d'abord une revue de la recherche sur le développement neuropsychologique, psychobiologique et socio-psychophysiologique montrant les niveaux de compétence et de capacité d'apprentissage aux stages prénatals et périnatals. Puis il suggère quelques questions que cette nouvelle compétence soulève pour la théorie et la recherche ethnologique.

Pre- and Perinatal Competence

It seems probable that consciousness of some kind is present in the prenatal child at least as soon as a functioning neural substrate is in place. "Substrate" is defined here as the neurophysiological structures requisite to the occurrence of perceptual experience, which includes at least intentionality, sensory objects, knowledge (however rudimentary) and learning. This does not mean that the prenatal child need be wholly "cortical" to be conscious or to learn, although adult consciousness is probably largely cortical in organization (Doty 1975:797-798). Rather, it means that as soon as a presiding, cybernetically active neural network is present in the developing nervous system, the child may be said to be conscious.[2] Cortical consciousness would appear to emerge sometime during the last trimester of gestation, or around the time of birth.

Thus, the extent and range of functions comprising pre- and perinatal consciousness will be determined in large part by the organization of the child's nervous system and its *cognized environment*[3] at each stage of its development. This development, particularly during gestation, is largely determined by the genotype (Imbert 1985) and unfolds in intimate dialogue with the *operational environment* — that is, with the actual nature of the individual organism and its world. The process of development of the nervous system, and its conscious network, tends toward greater differentiation of structure and function, and a greater hierarchy of control functions (Powers 1973; Gottlieb 1983:6).[4] Of course, development of the organization of consciousness continues for years after birth; e.g., development of the prefrontal areas of the cortex mediating the "higher cognitive functions," is not mature until the later teens or older (Becker, Isaac and Hynd 1987).

The Prenatal Child

The available data indicate that the cognized environment of the prenatal child is indeed one of rich sensory experience (Bornstein 1985), and that it is behaviourally very active, at least by the beginning of the second trimester:

> The fetus during the second trimester, while the amniotic sac is still rather roomy, now floats peacefully, now kicks vigorously, turns somersaults, hiccoughs, sighs, urinates, swallows and breathes amniotic fluid and urine, sucks its thumb, fingers and toes, grabs its umbilicus, gets excited at sudden noises, calms down when the mother talks quietly, and gets rocked back to sleep as she walks about. . . . The normal fetus rarely goes 10 minutes without some gross activity, either with fetal breathing spurts during REM-sleep periods or with other movements. It moves in regular exercise patterns, and one observer said it could be seen in ultrasound pictures "rolling from side to side [with] extension and then flexion of the back and neck, turning of the head and neck [and] waving of the arms and kicking of the legs. The feet were seen to

flex and extend as the fetus kicked the side wall of the gestation sac. In one fetus the jaw was seen to move up and down.'' The fetus in fact has quite regular activity cycles averaging about 45 minutes, cycles which later, in the third trimester, can be felt quite accurately by the mother. These fetal patterns become coordinated to some extent with the activity cycles of the mother — evidence that the fetus is quite sensitive to a wide range of the mother's activities and emotions. (deMause 1981:10-11)

This does not mean that the consciousness of the prenatal human being is the same as that of an adult, or even as that of a postnatal child. It is not, nor could it be, for the component systems of the network of cells producing consciousness are maturing at a rapid rate, especially during the second and third trimester of prenatal life and the first six months or so after birth. There are also considerable individual differences in the rate of development.

As a pictorial aid, Figures 1 and 2 illustrate the prenatal development of the human body and cerebral cortex, respectively.

Table 1 presents a summary of some of what we know about the course of prenatal physiological and psychological development.[5] This summary is uncomfortably sparse and the phase of gestation during which any particular function first begins to actually manifest itself is often uncertain. However, it will give the reader a quick sense of the course of prenatal neurobiological and psychological development.

Table 1
A Rough Summary of the Landmarks of Neurophysiological and Psychological Development during Human Prenatal Life by Approximate Month and Week of Gestation

Month	Week	What Is Known About Brain and Consciousness:
0	0	Conception.
	1	Blastocyst implanted in the uterine wall.
	2	Ectoderm forms from which the nervous system will differentiate; beginning of "embryo" stage.
	3	Nervous system begins to form; neural groove and tube, then optic vesicles and auditory placode present; acoustic ganglia appear; formation of cortical plate where cells of cortex produced.
	4	Neuroectoderm complete and begins differentiation into neural tissue; spinal cord, rhombencephalon, mesencephalon, diencephalon and telencephalon are all evident; rapid growth of the brain; heart begins to beat; autonomic nervous system (ANS) begins to form (cells migrate from neural crest to form sympathetic ganglia and trunk, cells from brain stem and spinal cord form parasympathetic nerves, including cranial nerves III, VII, IV and X); olfactory placodes arise.
1	5	Blood vessels begin to penetrate neural tissue; optic vesicle appears; cerebral vesicles distinct; ear begins to form; cerebral hemispheres begin to bulge.

Table 1 (continued)

Month	Week	What Is Known About Brain and Consciousness:
	6	Primordium of cerebellum; cochlea appear; hypothalamus differentiates within diencephalon; nerve plexuses present; sympathetic ganglia forming segmental masses.
	7	First contralateral head flexion; telencephalon transforms to the cerebral hemispheres; basal ganglia appear; first commissure fibres form (anterior and hippocampal commissures); middle ear ossicles appear; sympathetic chains of the ANS more developed; nerve fibers invade optic stalk; eyelids forming.
	8	Sub-cortical synapses; cerebral cortex begins to obtain typical cells; movement of head, arms and trunk easily; rudimentary beginnings of most bodily organs apparent; taste buds apparent; end of "embryo" stage and beginning of "fetal" stage; fetus looks more "human."
2	9	Vestibular system immature, but operating; fully functioning kidneys secreting urea and uric acid into amniotic fluid; visual system, esp. the retina, develops rapidly between second and fourth months; sensory nerves have developed and now contact the skin; face has human appearance.
	10	Main parts of the brain differentiated; corpus callosum incomplete; cortex individualized within the mantle, but only four layers; lower visual pathway in place; adrenal medulla and the paraganglia of the ANS differentiated; spinal cord attains definitive internal structure.
	11	
	12	Fetus clearly moving — grasping, sucking, squinting; increased heart rate in response to touch by amniocentesis needle; swallowing and tongue movements; anterior corpus callosum forms; all parts of brain (except sulci) present by 12th week; first evidence of adrenal medulla chromaffin cells; neuroglial cells begin to differentiate.
3	13	Primary cortical sulci begin to appear; formation of major nuclear groups of the limbic system between third and fourth months; hypothalamic-pituitary-adrenal axis active.
	14	Taste apparatus in place.
	15	Corpus callosum complete; functional retinae; mothers first detect signs of life between 15 and 20 weeks.
	16	Frowning, grimacing; squinting if eyelids touched; beginning of cortical cell migration; cerebral hemispheres conceal much of the brain.
	17	
4	18	Gag reflex; hippocampus begins to differentiate.
	19	Cortical layers begin to form; different cortical functional areas may be distinguished; primitive body language indicating aversion to noxious stimuli (e.g., amniocentesis needle, ultrasound).
	20	Cortical dendritic branching and synapsing begins; hair cells in organ of Corti develop; produces catecholamines (related to ANS functioning) in increasing amounts from before now to end of gestation.

Table 1 (continued)

Month	Week	What Is Known About Brain and Consciousness:
	21	Audible crying.
5	22	Sensitive to touch as any one-year-old; aversive reactions to cold water injected into mother's stomach; myelinization begins; associative learning demonstrated (music w/relaxation) for fetuses between 22 and 36 weeks.
	23	
	24	Main mass of cortical cells in place and major convolutions form (frontal lobes poorly developed); hearing structures all in place; listening constantly, but immaturely, and keyed to mother's heartbeat; pupillary response.
	25	Moves in rhythm to orchestra drum; vestibular system fully mature.
6	26	Six layers of cortex evident by this time, and different areas clearly distinguishable by type of cells and cell layers; no more cortical cells will be produced; premature infant can survive because lungs can breathe on their own; NS capable of directing rhythmic breathing and regulating body temperature; memories from roughly six months on; discriminates mother's attitudes and feelings and reacts to them; eyelids can open and retinal fovea begin to form.
	27	Limited dendritic branching on pyramidal cells in visual cortex.
	28	Primary sulci deeper and better defined and secondary sulci begin to appear; neural circuits nearly as complex as a newborn; possible awareness (?).
	29	Asymmetries in cortex first visible.
	30	Myelinization of cerebellum begins.
7	31	
	32	EEG data showing all primary and secondary cortical association areas working; EEG's become distinct for sleep and wake; REM sleep apparent; clear evidence of visual attention.
	33	
	34	Habituation demonstrated in fetuses; active visual attention reported; significant dendritic branching of both pyramidal and stellate cells in visual cortex.
8	35	Cortical cells same as full term, but with less dendritic branching; evidence of visual recognition memory.
	36	
	37	
	38	
9	39+	Full term; auditory system reasonably mature; stories read to baby in utero recognized after birth.

Sources of Data: Verny (1982), Chamberlain (1983), Larroche (1966), Walton in Stave (1978), Rosen and Galaburda in Mehler and Fox (1985), Busnel and Granier-Deferre (1983), Hollander (1979), Balashavo (1963), Klosovskii (1963), Parmelee and Sigman (1983), Spreen et al. (1984), Kjellmer (1981), DeCasper and Fifer (1980), Moore (1982), Barrett (1982), articles in Gootman (1986).

Figure 1
The Physical Development of the Prenatal Child from Nine Weeks Gestation
to Full Term, approximately 1/6 actual size

9 12 16   20   24   28   32   36   38
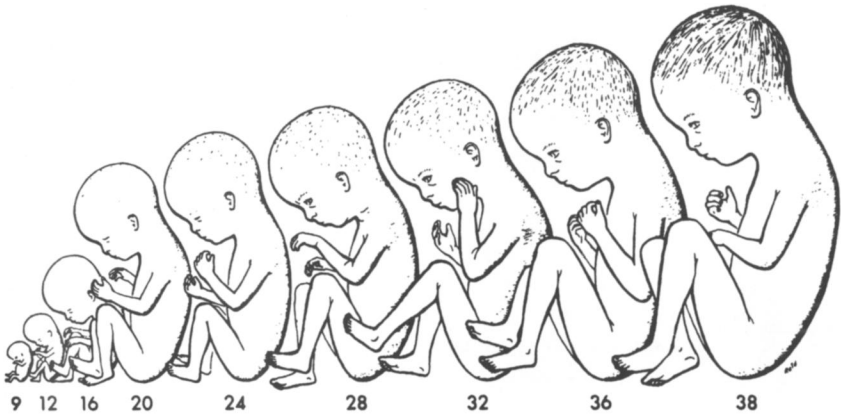
Source: Moore 1982:93. Reprinted with permission.

Encapsulating a bit, among the various sensory systems of the human nervous system, the somatosensory systems begin to develop first, followed in turn by the vestibular, the auditory and finally the visual systems. All of these systems become functional during gestation (Gottlieb 1971, 1976b). Furthermore, the cerebral cortex is in place and functioning before birth, providing the substrate for many of the precocious perceptual/cognitive functions now being documented for the neonate (see Visser et al. 1985; Weiskrantz 1988:69-70).

Of special interest to anthropologists is the development of the prefrontal cortex. Anatomically, this area is intimately connected to subcortical limbic and autonomic structures (mediating motivation and emotion), brain stem reticular activating systems (mediating arousal), posterior sensory and association cortex (producing sensory phenomena), and the frontal and cerebellar motor areas (controlling behaviour). The prefrontal cortex is known to service intentionality and modulation of affect and behaviour and to constitute temporal relations and plan goal directed cognitive and motor activity (Stuss and Benson 1986; Laughlin 1988). Unfortunately, our understanding of the functions and development of the prefrontal lobes is far from complete, and the developmental neuropsychology required to clear the picture has only just emerged. It is instructive, however, that just as with other cognitive functions of the nervous system, the age at which prefrontal synaptic development and rudimentary functioning is considered to begin is being moved back into early infancy, and some authorities would go so far as to say near birth (Diamond 1988; Welsh and Pennington 1988). Moreover, it is becoming apparent

Figure 2
Development of the Cerebral Cortex Relative to Brain Weight
and Gestational Age
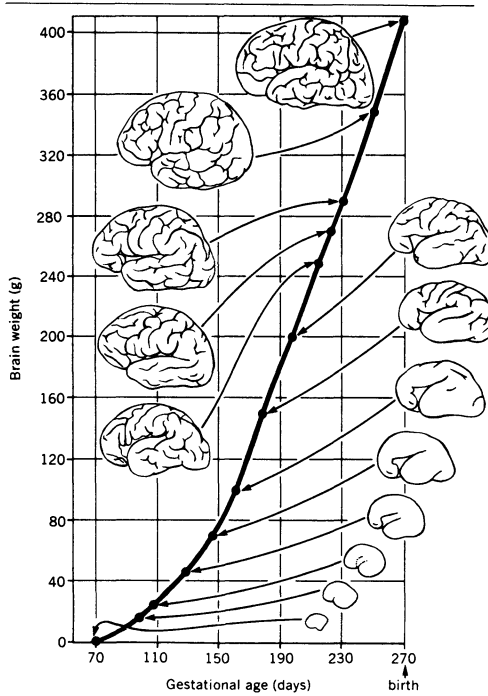
Source: Lemire et al. 1975:235. Reprinted with permission.

that different components of the prefrontal complex of functional areas mature at different rates (Nonneman et al. 1984). It seems likely that some prefrontal functions actually begin to emerge in prenatal life.

Learning and the Environment of the Womb

The universality of sequencing and emergence of cognitive and perceptual functions in prenatal life are due to two factors:

1. the brains of all people seem to develop in a relatively invariant manner during pre- and early perinatal life (Turkewitz and Kenny 1982; Larroche 1966; Glassman and Wimsatt 1984), and

2. the womb provides a relatively similar environment for all humans.

But although the neurobiological development of the fetus is genetically regulated, it also seems clear that the influence of the environment upon the development of cognitive and perceptual structures begins at some point in prenatal life (see Gottlieb 1976b and Barrett 1981 for reviews), and acceler-

ates throughout the pre- and perinatal period. We now know that most of the activity of the sensory neural cells at every hierarchical level involves abstraction of invariant patterns in the ever-changing perceptual field, and projection of these (as *re*-cognition) upon events arising in the world (Hubel and Wiesel 1962; Gibson 1969; Barlow and Mollon 1982; Imbert 1985).

Moreover, a range of environmental factors are known to influence the development of children in the womb — mother's diet and fetal malnutrition, toxins in the environment, availability of oxygen, noise, mother's endocrinal and emotional states, mother's attitude toward pregnancy and birth, mother's movement, mother's smoking, alcohol and drug consumption, and other stressors have an effect upon the child's experience and neural development (see Verny 1982; Sontag 1941; Schell 1981; Klosovskii 1963; Joffe 1969; Stave 1978; Maurer and Maurer 1988:16-20; Chisholm 1983:135ff.; Dhopeshwarkar 1983; Streissguth et al. 1989; Winick 1976; Elkington 1985). In addition there are some suggestive data from animal studies that indicate that the extent of enrichment or impoverishment of the maternal environment may have a determinant effect upon the complexity of dendritic branching of the fetal cortex, thus indicating in physiological terms the possibility of "intrauterine education" (Diamond 1988:91), a possibility acknowledged and even institutionalized in some other cultures (e.g., Japan, see Nakae 1983; Mohave Indians, see Devereux 1964:267; and Ashanti, see Hogan 1968).

Fetuses may well become "sensitized" to the speech of their mothers and others while in the womb, and are quite capable of some types of associative learning by at least the fifth month of gestation (Busnel and Granier-Deferre 1983). It is also significant that areas of the left hemisphere of the cortex associated with language processing are observed to be larger than homotopical areas of the right hemisphere as early as the 29th week of gestation (Rosen and Galaburda 1985: 315), indicating that the neural substrate for the processing of speech and language may be present *in utero*.

Emotion

Part of early learning involves establishing an emotional set relative to objects in the world, and to the world of phenomena as a whole. Contrary to the views of theorists who consider "emotion" to be a strictly cortical-level, cognitive process (e.g., Maurer and Maurer 1988), stress-related affective and arousal states, mediated by discrete interconnections of hypothalamic, autonomic, adrenal medulla, brain stem reticular, limbic, and motor "fight and flight" systems, that develop early in prenatal life, may establish responses to recurrent stressful stimuli (see relevant discussion by Gellhorn 1968:144ff.; also McKinnon, Baum and Morokoff 198; Levenson 1988; Hofer 1974). In other words, subcortical and peripheral nervous system orientations toward

the world of experience may be established prenatally even before cortical processes have matured, and this may eventually induce a biased orientation of cortical connections when they do mature. And it is now known that most, if not all of the basic human emotions are present and being expressed by the perinatal child just after birth (Campos et al. 1983). Indeed, studies of changes of heart rate, blood pressure and peripheral vasomotor tone suggest that the fetus and newborn are endowed with extremely reactive autonomic systems that respond to a wide range of stimuli in the environment (Rogers and Richmond 1978; Hofer 1974). A number of theorists have held that a bivalent approach-with-interest/withdrawal-with-disgust emotional response to objects is present from birth and provides the initial motivation for exploration of the physical and social world (Schneirla 1959; Izard 1977; Fox 1985).

Thus, a long-term, often generalized, stressful and emotional orientation may develop toward either specific aspects of experience, or experience generally (Chamberlain 1989). Among other causes, the emotional state of the mother during pregnancy may influence long-term emotional patterns in the child. Chisholm (1983:135ff.) has reviewed the cross-cultural data showing a correlation between the elevated blood pressure on the part of pregnant women, or women in labour, and the later high stress level (as indicated by irritability) on the part of their newborns (see also Barrett 1982:279). There is also reason to believe that, as in rats, early infant stress may result in higher physical stature in human males cross-culturally (Landauer and Whiting 1964). Of corollary interest is the suggestion that extraordinary stressing may be incorporated within childhood initiation ceremonies to bring about culturally required transformations in autonomic and endocrinal balance or "tuning" (Morinis 1985; Gellhorn and Kiely 1972; Lex 1979).

Awareness

It is methodologically difficult to obtain direct evidence of attention or "awareness" in prenatal life, but if one assumes a correlation between conjugate saccades (rapid scanning eye movements) and attention, this function is operating by at least the 28th week of gestation, and probably earlier. And if one assumes that some form of awareness is requisite for memory (operating by at least the 25th week), then this would push the beginning of awareness back even further (e.g., Ploye 1973). In any event, the child is exquisitely sensitive to its environment, and the range of visual, auditory, biochemical, emotional and somaesthetic stimuli arising in its cognized environment is remarkable (see Ploye 1973; Liley 1972; Schell 1981; Sontag 1941; Fries 1977).

Learning and Birth

Unless interrupted by obstetrical intervention, birth is a tremendous event in the life of every person (Stave 1978). Recent evidence has shown that there is a naturally enhanced sympathoadrenal activity in the fetus/neonate, releasing adrenal catecholamines into the bloodstream during the birth process (Lagercrantz and Bistoletti 1973). The suspicion is that this enhanced excitation of the child's circulation, respiration and metabolism during birth helps the child to establish a normal somatic adaptation to its new circumstances, as well as to protect itself from potential hypoxia and hypercapnia during the actual birth (articles by Jones and by Silver and Edwards in Parvez and Parvez 1980). Moreover, conservative interpretations of strictly experimental research to the contrary (e.g., Maurer and Maurer 1988), there is ample clinical (Chamberlain 1983, 1989; Verny 1982, 1987; Janov 1972, 1983; Laing 1982; Cheek 1974; Grof 1976, 1979, 1985, 1988), pediatric (Brazelton and Als 1979; Brazelton, Koslowski and Tronick 1977; Sanders-Phillips, Strauss and Gutberlet 1988; Blackbill et al. 1974; Rose 1981), and ethnographic (Neumann 1963; Eliade 1958; Trevathan 1987; Laughlin 1985, 1989) data to indicate that just how the birth process occurs may leave a lasting positive or negative, and even a traumatic effect upon consciousness. A study by Niles Newton (1970) shows that there is a cross-cultural correlation between the psychological environment of birth and the ease and speed of birth. Easier labours seem to be associated with acceptance of birth as natural and non-frightening, and with a comfortable and supportive social environment. Newton tested this finding experimentally on mice and found the same association. Of course, cultural influences upon the birth process and the treatment of the neonate are found to vary enormously cross-culturally (Brazelton, Koslowski and Tronick 1977; Liedloff 1975; Trevathan 1987; Kay 1982; MacCormack 1982; Ford 1945, 1964; Eibl-Eibesfeldt 1983; Mead and Newton 1967), thus indicating an enormous range of possible birth experiences from the neonate's point of view.

Perception and Learning in the Perinatal Child

Interaction between the developing nervous system and the environment becomes even more important during postpartum development and with age. The growth of the brain is rapid and dramatic during the first months of infancy. The brain of the neonate at birth weighs roughly 300 to 350 grams and will reach 80 percent of its adult weight (1250-1500 grams) by the age of four years (Spreen et al. 1984:29).

Figure 3 illustrates the dramatic increase in the weight of the human brain during gestation and after birth, while Figure 4 provides a comparison between the rates of postpartum development of humans and chimpanzees.

Figure 3
The Growth Curve of the Weight of the Human Brain through
Gestation and into Adult Life
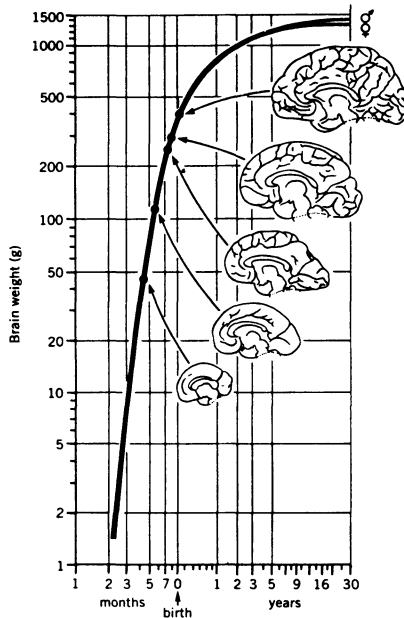
Source: Lamire et al. 1975:236. Reprinted with permission.

Virtually all of the neural cells that one will ever have in one's life are present by the seventh month of gestation.[6] Most of the dramatic brain development during the last trimester of prenatal life, and during early post-natal life involves the growth of interconnections between neural cells, selection and elimination among these connections (Oppenheim and Haverkamp 1986; Changeux 1985; Purves 1988; Bronson 1982), growth of glial (support) cells (Bronson 1982), and myelinization of certain classes of fibres (Yakovlev and Lecours 1967). It is only later in development that the growth of other somatic processes overtake that of the brain (see Figure 5).

The most intense phase of dendritic branching and synapse formation occurs after birth. Figure 6 gives yet another indication of the prolific development of the perinatal cortex.

A cautionary note is worth interjecting here: Much has been made in the past about the presumed greater plasticity of the infant brain compared with the adult brain (the so-called Kennard principle). The implication of this view has been that the organization of the infant brain is so immature and malleable that functions can be readily spared and taken up by alternative tissues if

Figure 4
Percentage of Adult Brain Size Plotted against Age in the
Chimpanzee (C) and Human (H)
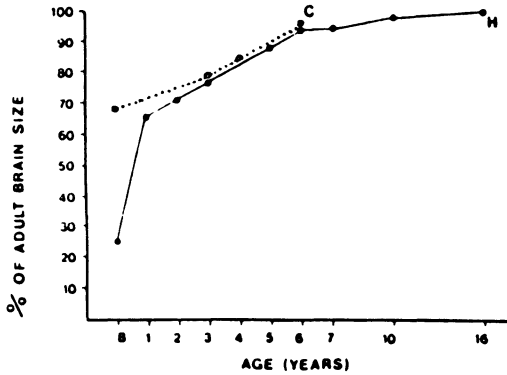
Source: Van Hof and de Blecourt 1984:89. Reprinted with permission.

damage is sustained. There is now a growing body of data to suggest that the opposite situation may be the case, that under certain circumstances the infant brain may be more susceptible to disruption than the adult brain (see Will and Eclancher 1984). Of related interest are data indicating that the neonatal and infant cortex is already thoroughly lateralized in its functions, even prior to language competence and fully developed handedness (Kinsbourne and Hiscock 1983). Table 2 presents a summary of some of what is known about perinatal development to the postpartum age of six months.

Table 2
A Rough Summary of the Landmarks of Neurophysiological and
Psychological Development, with Sources of Data, during Human
Perinatal Life by Month of Postpartum Age

Month	Week	What Is Known About Brain and Consciousness:
0	0	Birth is an intense experience of transformation (Stave 1978); bonding with mother before and just after birth (Sugarman 1977; Chamberlain 1983:17, Brazelton and Als 1979; Liedloff 1975; Ainsworth 1967; Ainsworth et al. 1972; Bowlby 1969; Eibl-Eibesfeldt 1983; Trevathan 1987); recognition of mother's voice demonstrated (Busnel and Granier-Deferre 1983; DeCasper and Fifer 1980); born with innate capacity for interpersonal communication (Trevarthen 1983b); foveal vision immature relative to peripheral vision (Banks and Salapatek 1983), but multimodal perceptual coordination in exploration of environment (Field 1987); able to discriminate and imitate facial expressions (Meltzoff and Moore 1983a; Field et al. 1982); facial expression of positive and aversive response to tastes (Steiner 1979); cerebral hemispheres anatomically asymmetrical (Witelson and Pallie 1973);

Table 2 (continued)

Month	Week	What Is Known About Brain and Consciousness:
		behavioural and electrophysiological asymmetries (Turkewitz and Creighton 1974; Molfese 1977); slight right-hand bias from birth in dextrals (Bates et al. 1986).
	1	Recognize and prefer mother's smell (McFarlane 1975).
	2	Recognize their mother's picking them up in the dark and silence (Widmer cited in Murray and Trevarthen 1985).
	3	Typical adult pattern of lateral asymmetry for speech and non-speech sounds present by 22 days, but possibly from birth (Entus 1977).
1	4	May be visually sensitive to kinetic flow-field information about impending collision with an object (Yonas and Granrud 1985).
	5	
	6	Evidence of ability to perceive spatial structure of visual objects (may be present from birth; Cook 1987); sensitivity to complex nuances of communicative and emotional states in mother by this age or earlier (Murray and Trevarthen 1985).
	7	
2	8	Evidence of phonetic discrimination (Busnel and Granier-Deferre 1983); evidence of bimanual haptic exploration of objects (Streri and Spelke 1988); great proliferation of cortical dendritic spines, many of which are later lost (Banks and Salapatek 1983:453).
	9	Emotional expression by facial expression, vocalization and gesture; intensely involved in interpersonal engagement (Trevarthen 1983b) involving "turn-taking" between mother and infant (Mayer and Tronick 1985).
	10	
	11	
3	12	
	13	Significant right-hand bias established, stronger for symbolic, as opposed to non-symbolic movements (Bates et al. 1986).
	14	
	15	
4	16	Visual stereopsis and equalized optokinetic responses adult-like (Held 1985); binocular summation of pupillary response (Birch and Held 1983); visual accommodation now more like adult (Haith 1980:122); knowledge produced by bimanual haptic exploration is transferred cross-modally to vision (Streri and Spelke 1988).
	17	
	18	Size of visual objects remains constant with varied distance (Day 1987).
	19	
5	20	Evidence of object permanence (Spelke and Kestenbaum 1986; Baillargeon, Spelke and Wasserman 1985).
	21	
	22	
	23	Pictorial depth information (Yonas and Granrud 1985)
6	24	

Figure 5
Growth of the Human Brain Compared to Overall Growth
of the Body, Using Weight as a Measure
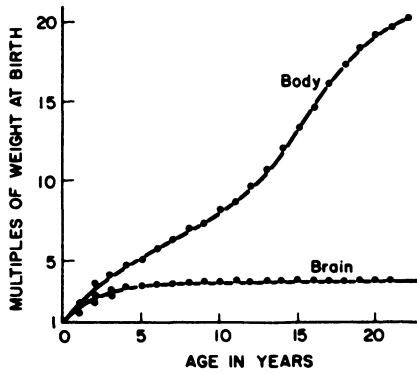
Source: Thompson 1917. Reprinted with permission.

The Perinatal Sensorium

The perinatal sensory system is comprised of developing networks of inter-connecting cells that have already begun to function in prenatal life as soon as they are in place. At no time is the sensory system producing a chaos of random sensations as was once believed (and at least tacitly implied by some current writers; see Maurer and Maurer 1988:51). Rather,

> In recent years, it has become abundantly clear that William James' . . . charac-terization of the world of the infant as a "blooming buzzing confusion" is simply wrong. There is evidence that the infant's world is structured and that far from being overwhelmed by a barrage of stimulation which only slowly comes to be sorted out, the infant from his earliest days is quite properly characterized as competent and organized. It is our contention that one of the major sources for this organization is the infant's limited sensory capacity. (Turkewitz and Kenny 1982:362)

This is a crucially important fact: most available evidence suggests that *there exists no stage of development, prenatal or perinatal, in which the cog-nized environment of the child is in chaos.* It is ordered from first to last (e.g., see Blakemore 1974 on the development of the visual system). Sensory orga-nization emerges during development, mediating an ever ordered, yet ever more complex and more flexible field of perception. Furthermore, as the sen-sorium develops, particularly at the subcortical levels, well before higher cortical functions, the order inherent in primitive perception is ontogeneti-cally the primary order in human experience. In other words, the primacy of the order of perception in consciousness holds not only for adult cognition

Figure 6

The Developing Perinatal Brain. Drawings of Cells in the Visual Cortex of Human Newborns, One-month-olds, Three-month-olds, and Six-month-olds. Roman numerals refer to cortical layers.
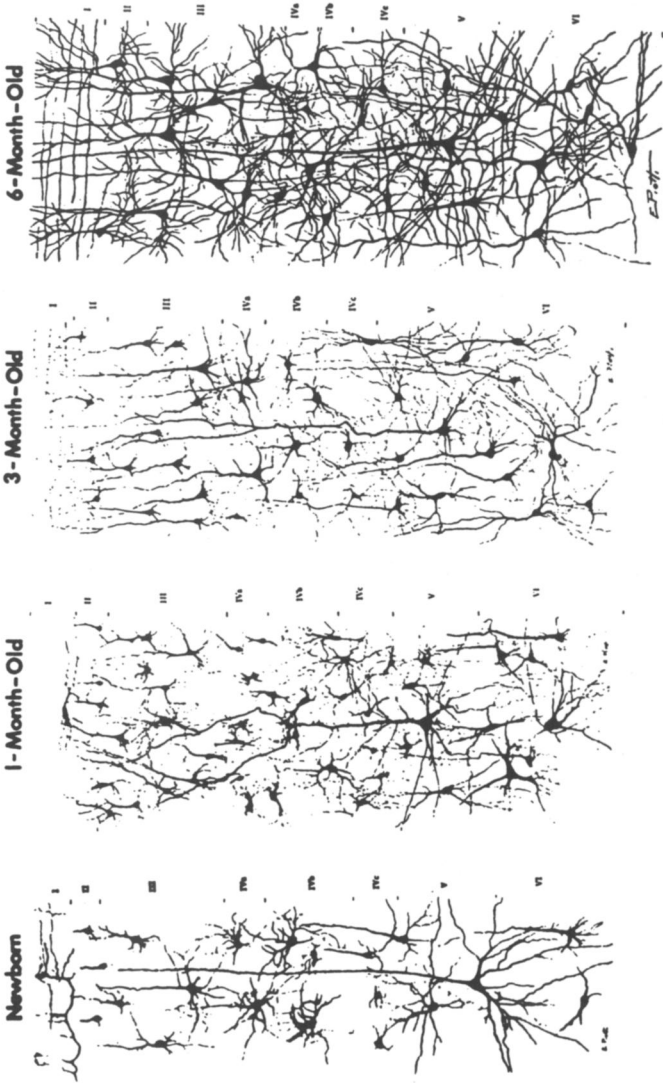
(as Merleau-Ponty 1964, 1968 repeatedly emphasized), but for ontogenesis as well (see Laughlin 1985). Moreover, it is now clear that there is continuity in the development of cognitive functions operating upon sensory objects from at least birth onward (Bornstein and Sigman 1986).

Vision

The visual system of the infant, although it is the last to begin developing in the womb, is nonetheless fairly precocious at birth (Haith 1980). The infant soon after birth is found to have a fully functioning pupillary response over a wide range of light intensities, if somewhat nearsighted by adult standards. The infant can scan (with both eyes synchronized, but with immature convergence) the visual field in moderate illumination and in the dark, will fixate upon objects of interest (particularly the edges of things), inspect them avidly and follow their movements. Objects are cognized by the detection of invariant features, including movement (Burnham 1987). They have both foveal and peripheral vision, saccadic movements, and the internal visual pathways and cortical association areas requisite to learning. Haith (1980:119) suggests that "the newborn's visual activity can be understood in terms of a system that serves to keep visual cortical-firing rate at a high level." In other words, the newborn is already prepared to explore its environment, and detect, explore and model objects and relations found there. In fact, some researchers go so far as to suggest that object perception develops early and that the infant at, or near birth is perceiving the world out of a single mechanism, an already mature "object concept" (Streri and Spelke 1988) from which it explores the surfaces and movements of objects in its environment.

The infant appears to require several months before it is capable of fully binocular experience, extraction of information (Imbert 1985), and well coordinated selectivity and attention control (Braddick and Atkinson 1988). However, within a couple of months after birth at the latest, the infant is perceiving objects that extend behind other objects, and by five months can perceive them as continuing to exist when lost to view (Kellman and Spelke 1983; Baillargeon, Spelke and Wasserman 1985; Spelke and Kestenbaum 1986). From at least the time of birth, infants are thought to discriminate colours and sounds on the basis of perceptual categories mediated by innate neural structures maturing during gestation (Wilson 1987).

The Other Senses

The perinatal cognized environment is also rich in gustatory, auditory and tactile sensations, as well as somaesthetic sensations of intrinsically initiated movements (see Ganchrow, Steiner and Daher 1983; Steiner 1979; Barlow and Mollon 1982; Busnel and Granier-Deferre 1983). Of particular importance to anthropologists is the infant's interest in and ability to discriminate

speech sounds in a manner similar to that of adults (Eimas and Corbit 1973; Cutting and Eimas 1975; Eimas 1985; Eimas, Miller and Jusczyk 1987; Jusczyk 1985; Aslin, Pisoni and Jusczyk 1983). The newborn's cerebral hemispheres are distinctly anatomically asymmetrical (Witelson and Pallie 1973), and Molfese (1978) has presented electrophysiological data showing that left hemisphere response to speech sounds is greater than for non-speech sounds. Newborns have been shown to prefer speech sounds to sounds made by non-human objects, and female voices to male voices (Eisenberg 1975), and to extract information about emotional expression from intonation (Trevarthen 1983a).

Abstract Perceptual/Cognitive Associations

Although their functioning seems primitive, the infant between birth and about four months of age is nonetheless equipped with the perceptual and cognitive structures in place to apprehend substantial, physical objects, their unities, their boundaries, their constituent parts and their continuity during displacement (Spelke 1985, 1988a and 1988b). Some researchers have suggested that perhaps by late intrauterine life, by birth, or certainly by four months of age the child is equipped with innate higher perceptual and cognitive structures that anticipate a three-dimensional and temporal/causal world that becomes fulfilled and refined in actual perceptual experience as it arises in the sensory system (see Gibson 1969; Treiber and Wilcox 1980; Bower 1974; Bower and Wishart 1979; Meltzoff and Borton 1979; Antell and Keating 1983; Banks 1988; Spelke 1988b; Leslie 1988; Gottlieb 1976a). This fulfilment may include a fundamental evaluation of the object as being positive or negative, pleasurable or displeasurable (Lipsitt 1979; Steiner 1979).

Refined perceptual structures project redundancy upon the perceptual field. It is clear that neonates and infants are conscious of and learn from perceptual novelty in their environment (Rovee-Collier and Lipsitt 1982; Sameroff and Cavanaugh 1979). Individual differences in attention to novel, as opposed to previously seen objects, as well as other attention-related factors, have been found among infants, and these have been shown to be predictive of psychometric intelligence later in childhood (Fagan 1984a, 1984b; Fagan et al. 1986; Lewis, Jaskir and Enright 1986; Hollenbeck et al. 1986; Rose, Feldman and Wallace 1988; Colombo, Mitchell and Horowitz 1988). The intelligent neonate and infant seems to be curious about its world and especially about novelty, despite the well-known altriciality of its behaviour, i.e., its dependence on its caretakers (Zelazo 1979; Moss et al. 1988; Trevathan n.d.). Long-term memory increases dramatically during the first weeks after birth (Ungerer, Brody and Zelazo 1978).

Associations are not merely limited to single sensory modalities, for infants are quite capable of multimodal perceptual associations (Dodd 1979;

Spelke 1979; Kuhl and Meltzoff 1988) and synaesthesia ("seeing" sounds, "hearing" colours, etc.; Lewkowicz and Turkewitz 1980). This supramodality of perceptual categories and associations is just as one would expect if higher, more abstract perceptual structures are indeed in place by birth. Moreover, as the nervous system, even during prenatal life, is developing in intimate dialogue with the external environment, the question of a role of culture in influencing the development of these perceptual and cognitive structures is clearly indicated (see Bornstein 1985), despite the relative behavioural altriciality of the neonate and infant (see Figure 7).

Figure 7
The development of behaviour lags behind the competence of perception and cognition. The stages of behavioural development are depicted for the human infant. The orientation of the baby on this graph indicates its cranial-caudal progression.

		STANDS ALONE
		WALKS WITH SUPPORT
		CRUISES
		PULLS UP
		CRAWLS
		SITS BRIEFLY
		TRANSFERS OBJECTS
		ROLLS OVER
		HOLDS HEAD
		TURNS HEAD
		SMILES
		REGARDS

0   2   4   6   8   10   12
Age (months)
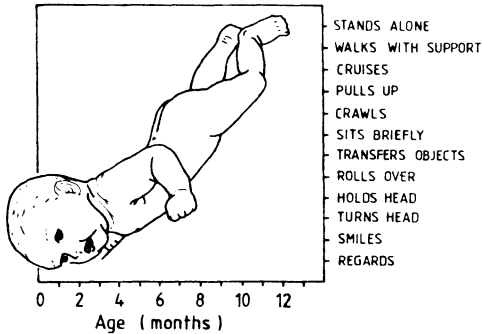
Source: Lowrey 1973. Reprinted with permission.

The Social Cognized Environment of the Perinatal Child

The preparedness of the neonatal perceptual/cognitive system for learning is not limited to physical objects and relations in the environment. The infant is inherently and actively social in its activities, and participates fully in socially related learning (Papousek and Papousek 1982). A major mechanism of social learning for the infant is, of course, imitation. This is learning about social interaction by doing, and the structures for inculcating perceived gestures and facial expressions may prove to be present at birth (Meltzoff and Moore 1983a, 1983b). As Meltzoff and Moore (1985:140) note, imitation is ubiquitous to human learning cross-culturally. Research on this capacity of neonates is just beginning, and conclusions should be treated as tentative (Over 1987).

However tentative, the research results thus far (see Meltzoff 1985) do support the notion that the newborn human being is neurocognitively active and prepared to recognize significant social events in the environment. In phenomenological terms, not only is the primacy of perception the rule for neonates in ordering the physical cognized environment (à la Maurice Merleau-Ponty 1964), it is also the rule in ordering the social cognized environment (à la Alfred Schutz and Thomas Luckmann 1973). That is, not only is the world of physical objects "already there" to the neonatal perception at, or before birth, so too is the world of socially significant objects and interactions — objects that include speech sounds, interactive gestures, emotional expressions and faces, and especially the face, gestures, emotional expressions, smell, physical touch, breasts and voice of its mother (Field 1985; Murray and Trevarthen 1985; Butterworth and Grover 1988). Furthermore, these socially relevant objects receive characteristic bivalent emotional responses by the infant (Schneirla 1959; Lipsitt 1979; Bowlby 1969, 1972), indicating an innate proclivity to seek out social bonding and interaction, and avoid separation, isolation and potentially dangerous strangers. Failure or serious perturbation of the infant's social bonding can and does produce profound and potentially long-term effects upon personality organization, affective orientation and patterns of adaptation (various references in Murray and Trevarthen 1985:192; also Ali and Lowry 1981).

The inborn proclivity for social interaction is, as we have seen, reflected in the infant's preparation to explore and produce speech sounds. It was until recently thought that older infants passively receive language enculturation and that their early babbling is meaningless and bears no relation to the later development of "real" speech. This view has currently been reversed (at least in developmental psycholinguistics). The best recent evidence indicates that infant vocalization and babbling are constituted by both genetically endowed and culturally labile features, and that they are a consequence of both an active intent on the part of the infant to communicate on the one hand, and the willingness of adults to interpret their vocalizations and behaviour as meaningful and to engage in dialogue with them on the other hand (Waterson and Snow 1978; Bullowa 1979; Murray and Trevarthen 1986). Oller et al. (1976) have shown that some of the phonetic content of babbling exhibits similar preferences to that found in later child speech, depending upon the language spoken. De Boysson-Bardies, Sagart and Durand (1984) partially confirm this finding by showing that adult speakers of different languages can accurately distinguish the recorded babbling of infants raised in their particular language group by recognizing certain metaphonological characteristics.

Furthermore, the form and content of adult babytalk has been shown to be determined by cultural attitudes and relations operating elsewhere in the

culture (Blount 1972, 1977:301; Goldman 1987), and to involve simplification and reduction of form (Ferguson 1977; Papousek, Papousek and Bornstein 1985). The data on many societies show that the mother is not the sole linguistic influence on the infant, influence coming frequently from an extended group of siblings and other kin (Blount 1977:299).

The Challenge of Pre- and Perinatal Psychology to Ethnology

Summarizing from the wealth of data now being accumulated about early human neurocognitive development, the pre- and perinatal child appears to be an active, growing, self-regulating, exploring and learning organism that is: (1) capable of seeking out, examining and learning about physical objects, (2) capable of constructing memories about life in the womb, about birth and about events occurring in postnatal life, (3) genetically predisposed to be interested in faces and speech sounds, (4) inherently social in its synchronized interactions and communications with caregivers, (5) inherently inclined to imitate expressions and gestures perceived, (6) capable of constructing supramodal models of physical and social objects, (7) probably (although as yet hard to be sure) engrossed much of the time in a symbolically rich dream-state cognized environment,[7] and (8) cognitively and perceptually precocious relative to its behavioural altriciality. None of this should be surprising to those who understand that much of what has made the evolution of the human brain so distinctive has been the emergence of precisely those areas of neural tissue subserving the construction of a cognized environment (see Sarnat and Netsky 1974; Jerison 1973; Laughlin and d'Aquili 1974).

The Obvious Question, and the Problems in Answering It

The obvious question that all of this raises for ethnology is: Does enculturation — i.e., the learning of new and traditional skills and ideas by individuals during the course of life (Herskovits 1948:37-45) — begin earlier in life than was previously thought? Does enculturation begin in fact during pre- and perinatal life? Does culture actually begin to be inculcated while the child is still in the womb, and does the inculcation process accelerate during the first months after birth? This question is difficult, if not impossible to answer by reference solely to ethnology, for it is precisely the pre- and perinatal period of life in which traditional ethnological theory has had little interest, and for which ethnography has produced little direct data.

There are several theoretical and methodological problems that hamper the production of ethnological theory and ethnographic data about early enculturation. The first and most obvious problem is that most ethnographers have been, and still are, males, and males are usually excluded from direct participation in female-only activities and concerns. For example, most cul-

tures forbid the presence of males during birth (Ford 1945; Trevathan 1987:35ff.), yet as Trevathan (1987) and Jordan (1978) have noted, accurate information about birth practices requires detailed direct observation.

A second problem is that although anthropologists claim to be interested in enculturation, ethnographers on the whole have paid little attention to infancy, much less prenatal life (see Bullowa, Fidelholtz and Kessler 1975; Newman 1972:51, Schreiber 1977 on this matter). Interest in infancy is now increasing in anthropology, but is still more the stock-in-trade of the cross-cultural psychologist than the ethnographer.

A third problem — and perhaps the most intractable due to its largely unconscious roots — is that anthropological thinking, uncritically reflecting its origins in the pre-scientific cognized environment of Euroamerican culture, tends to presume that a human being only begins to attain personality or consciousness at some time (days, weeks, months) after birth (LeVine 1982:245; Bullowa 1979:31). Entire texts can be written in general and even psychological anthropology with little or no reference to either the cultural forces that may shape the pre- and perinatal cognized environment, or the pre- and perinatal influences upon the later psychology of the individual as culture-bearer. As a result, until quite recently, anthropologists have had little to say about the quasi-scientific and ritualistic procedures and training still utilized in ''modern'' obstetrics (see Davis-Floyd 1987, 1990 on this issue).

A fourth problem is that ethnographic research is typically of short duration (usually between 12 and 36 months) and it is impossible in such a short time to carry out long-term causal studies. There exist virtually no longitudinal cross-cultural studies covering the entire life-course from conception to adulthood. And, as LeVine (1982:245) correctly notes, simultaneous studies of cultural influences upon the child and of adult characteristics can be misleading because cultures change, often rapidly. The cultural influences that formed the adult may have been different than those now operating on the child.

A fifth problem is that anthropology has traditionally conceived of the very young child as a passive recipient of culture. Until recently, there has been little awareness exhibited in the ethnographic literature of the pre- and perinatal child as a cognitively and perceptually competent, autonomous, self-regulating, adapting and experiencing human being exerting some control over interactions with its physical and social environment (see Konner 1981; Curran 1984:9).

A sixth problem is that the literature exhibits little sensitivity to the world as it may be experienced from the fetal/neonatal/infant point of view. Descriptions of pregnancy, birth, the puerperium, infant caregiving and child-rearing are generally from the outside-in, so to speak, and rarely consider the experience of the child. Of course, part of the problem is methodological. It is

hard to interview a fetus or an infant, at least when one is limited to the language-based and interactional methodologies typical of traditional ethnographic fieldwork.

A seventh problem lies in the established theoretical biases of ethnographers interested in childhood and childrearing. The two theoretical perspectives responsible for initiating and interpreting most of the ethnographic research on childhood are Freudian psychoanalysis, which has influenced ethnology from the early twenties (Whiting and Child 1953; LeVine 1980), and Piagetian genetic epistemology, which began to have an influence on cross-cultural work in the seventies (Dasen 1977; Dasen and Heron 1981). Neither of these two perspectives is particularly sensitive to the importance of pre- and perinatal enculturation. The Freudian perspective (in keeping with the predominant attitude in Euroamerican culture) conceives of personality as beginning sometime after birth (see Laing 1982 on this issue), and therefore has oriented research away from pre- and perinatal development and toward the more obvious institutionalized childrearing practices directed at the older child. Such research has been more concerned with the influence of traits like weaning practices, toilet training, handling of the Oedipal conflict, and the like on later personality structure.

Piagetian theory is concerned more with the universal organization of cognition and less with its content, its affective associations and its applications to environmental contingencies which may well be culturally influenced. Moreover, Piagetian methodology does not recognize the critical significance of the precocity of infant perception/cognition relative to sensorimotor competence. For instance, Piagetian theory holds that the object concept is constructed well after birth as a consequence of the process of sensorimotor interaction with physical objects (see Butterworth and Grover 1988 on this point). Moreover, Piagetian methods require the testing of competence via fairly advanced motor responses, and thus little cross-cultural research has been carried out, under the Piagetian banner, of relevance to the influence of prenatal, natal and neonatal variables upon later cognitive and psychological development.

Current Strengths and Future Directions

Despite these serious theoretical and methodological obstacles, ethnology has produced a significant literature pertaining to the cultural ethos and social factors that impinge upon the experience and conditioning of pre- and perinatal human beings (see Laughlin 1989 for a list of relevant reviews). Reading the ethnographic literature leaves one with the impression of the innumerable ways that a culture may influence the course and experience of very young children (for example, see Whiting and Edwards 1988 on the treatment of "lap children" in different cultures).

Culture influences who may court and reproduce, who may conceive and bear children and how often, who will be socially recognized as parents and caretakers, and to what social groups the child will belong. Custom dictates appropriate nutrition during and after pregnancy, the style of parturition practised, when feeding begins and how often it is allowed, which child will live and which will die, the value of multiple births, what work pregnant women may and may not do, how socially and communicatively competent the fetus/neonate is considered to be, and when the child is considered a human being and a member of the society. The ethnographic literature has documented the extent to which tradition may determine where a birth occurs, special herbs and massage administered during childbirth, who will attend the birth and who will be forbidden to do so, the proper posture(s) for parturition, the proper duration of the birthing, and the duration of and treatment of mother and infant during the puerperium. Culture will determine the intensity and nature of mother-infant attachment, the nature and duration of mother-infant separation, and the range of environmental stimulations to which the infant is exposed. Any and all of these factors may have their effect upon the experience, learning and later psychological development of the child.

Ethnographic research oriented toward pre- and perinatal enculturation should continue and be intensified in this vein — especially by female ethnographers — for not only is its importance now clearly indicated by research into the perceptual/cognitive competence of the very young child, it also will further help to place the findings of the experimental disciplines (e.g., cross-cultural psychology, pre- and perinatal psychology, developmental neuropsychology, developmental social psychobiology, etc.) within a naturalistic frame of reference. While there does seem to be a hiatus in the development of ethnological theory capable of explaining early enculturation and of guiding more refined research on this issue, research can nonetheless be profitably continued so as to provide the naturalistic context for the burgeoning experimental work of the sort reviewed above — indeed, a naturalistic context such as is called for by some of the experimental researchers themselves (see Joffe 1969:307-8; Gottlieb and Krasnegor 1985).

However, because of the unique difficulties in acquiring information about the ''emics'' of pre- and perinatal experience, and the non-institutionalized subtleties of infant-caretaker interactions, more sophisticated methods should be used to augment the more standard participant observation techniques. For one thing, fieldworkers may wish to utilize modern photographic, cinematographic and video technologies to record and analyze infant-caregiver interactions. Some ethnographers have already done so, and use photographs in their reports to good effect (see Sorenson 1976; Mead and MacGregor 1951).[8] Ethnographers may want to consider the use of synchro-

nized dual video recordings of infant and caregiver (Trevarthen 1983a; Meltzoff and Moore 1983a) in order to study spontaneous rhythmicity in synchronized interactions.

Pre- and perinatal ethnographers would be well advised to become sensitized to the range of testing procedures used to assess perceptual/cognitive and behavioural competence in the fields reviewed above (see Prechtl 1982 for a review). Some of these tests have been developed to evaluate the health of newborns, and have the dual advantage of being both cross-culturally applicable and in keeping with the level of neurophysiological maturity being studied (e.g., for the Cambridge Neonatal Assessment Scale see Brazelton et al. 1977; Freedman 1979:141ff.; for the Apgar measures of neonatal health see Apgar 1953, 1962; see also Gottlieb and Krasnegor 1985 for other techniques). In addition, tests have been developed to measure handedness (for the Edinburgh Handedness Inventory see Oldfield 1971) and perceptual novelty (see Fagan 1974, 1984b; Bornstein and Sigman 1986; Colombo, Mitchell and Horowitz 1988 for a variety of techniques).

But ethnology cannot simply borrow theory and methods from pre- and perinatal psychology and its sister experimental disciplines. On the one hand, these disciplines find themselves in theoretical disarray (see Mounoud 1988; Butterworth and Grover 1988). On the other hand, it seems likely that ethnographers may have to develop their own tests and techniques appropriate to the constraints of the field situation, to the naturalistic context that has been ethnology's greatest contribution to social science, and to the new questions being asked of the ethnographic data. For instance, as ethnology comes to develop theories of culture and psychology more applicable to pre- and perinatal life, the hypotheses they generate may require more of ethnographic methodology than can currently be supplied by participant observation, unaided by methods geared to circumvent the profound difficulties in researching the nature of infant development and adaptation. Traditional ethnographic methods are terribly reliant upon behavioural and linguistic competence for the production of data, but the pre- and perinatal human being, while being perceptually and cognitively precocious is neither behaviourally, nor linguistically competent.

Conclusion: The Roots of Enculturation

There is now ample evidence to suggest that the roots of enculturation are to be found in the adaptational dialogue between the developing pre- and perinatal brain and its physical and social environment. If this proves to be the case, then traditional ethnological theory and methods are inadequate to carry out the kind of research necessary to test non-trivial hypotheses about very early enculturation in a cross-cultural setting. Ethnology must therefore augment its traditional stock of methods with those adequate to the task of "inter-

viewing'' the pre-linguistic, pre-behaviourally competent human being.

The research payoffs for closer and more informed attention to the pre- and perinatal period of enculturation could be remarkable. To offer several examples: armed with requisite procedures, we should quickly be able to generate a cross-cultural data base on the development of phoneme discrimination among neonates and infants. This would allow us to take early enculturation more into account in our understanding of first language acquisition. By careful study of neonate-caregiver interaction, we can better determine whether or not there exists an innate critical period just after birth for establishing mother-infant bonding. Realizing as we do that most enculturation is informal, we could also discover to what extent the neonate and infant initiate aspects of their own enculturation — that is, how sensitive a particular culture is to the initiatives of the neonate and infant to learn, and in which domains. Moreover, we could come to better understand to what extent individual personality differences in a society may be explained by reference to differences in neonatal temperament.

In order to reap these rewards, ethnology must become theoretically more sensitive to the influences of culture upon the development of early cognition and the pre- and perinatal cognized environment. I have suggested that the influence of society upon early enculturation may at least involve the following factors:

1. the production of experiences that lead to something like Grof's "condensed experiential systems" (or COEX systems; Grof 1985, 1988) which are very early memory structures configured upon affective-imaginal associations and which form seed-like cores upon which later neurocognitive development coalesces;

2. conditioning orientation toward culturally salient objects in the operational environment for scanning and intentional association — that is, what sights, sounds, textures, tastes, etc. are available to the child's perception, and to which set of these is the child's attention directed by caregivers;

3. conditioning relative to rhythmic stimuli, perceptual recurrence, and temporal structuring of events (e.g., see Ayres 1973 on the relationship between infant carrying style and type of musical rhythm in cultures);

4. establishing a fundamental affective/arousal/response orientation toward novelty in the operational environment — that is, an emotional orientation (formed initially, say, during the birthing experience) lying somewhere along a continuum from positive through neutral to negative toward novel objects and events, as well as strangers, and change and transformation generally;

5. a range of patterns of mother-infant and caretaker-infant bonding and a

fundamental orientation toward gender that is later manifested in gender-related social roles, interactions and cosmological gender attributions (see Laughlin 1985);

6. the institutional control of a range of pre- and perinatal operational environments extending along the enrichment/impoverishment dimension (M.C. Diamond 1988; Renner and Rosenzweig 1987) — i.e., is the infant sequestered in a hut during the first weeks of life, or is it covered by mother's clothing while outside, or perhaps carried in a cradleboard in full view of everything the mother sees?

Whatever form the cultural influences operating upon pre- and perinatal learning eventually prove to take, the roots of enculturation will undoubtedly turn out to be as subtle as they are consequential to the later development of the person. These influences will be far more subtle than the kind of institutional traits that have heretofore preoccupied some psychological anthropologists. Thus, ethnology must cultivate a theoretical sensitivity and a repertoire of field methods equal to both the importance and the subtlety of the causal processes involved in shaping the pre- and perinatal cognized environment and the later development of the child.

Notes

1. This paper was presented at the annual meeting, Canadian Anthropological Society, Ottawa, Ontario, Canada, in May, 1989. The author wishes to thank Dr. Robin Fox and Ms. Judy Young-Laughlin for their editorial suggestions. Address inquiries to the author, Department of Sociology and Anthropology, Carleton University, Ottawa, Ontario, Canada K1S 5B6.

2. It used to be thought that these neural structures did not begin to function until their axons were coated with myelin (a fatty sheath that is wrapped around some axons as a kind of insulation; e.g., Langworthy 1933). It is now known that myelin has the effect of modifying the speed of transmission of signals in cells that are already functioning (Larroche 1966:273; Bekoff and Fox 1972; Yakovlev and Lecour 1967). Myelinization usually proceeds from the most archaic parts of the nervous system through the most recent, thus reflecting in ontogenesis the stages of evolution of the nervous system in phylogenesis (Larroche 1966).

3. I am interpreting these data from a biogenetic structural point of view. Biogenetic structuralism is an interdisciplinary approach to the study of cross-culturally invariant regularities of behaviour, symbolism, consciousness and cognition that combines evolutionary biology and the neurosciences with phenomenology and the social sciences (Laughlin and d'Aquili 1974; d'Aquili, Laughlin and McManus 1979; Rubinstein, Laughlin and McManus 1984; Laughlin, McManus and d'Aquili 1990). In many of our writings we call the substrate of consciousness (at whatever stage of development) an individual's *conscious network* and the world of lived experience constituted by the conscious network an individual's *cognized environment* (Laughlin, McManus and d'Aquili 1990). We have argued in numerous writings that conscious network and the cognized environment develop in interaction between initial, genetically predisposed models (termed *neurognostic models*, or simply *neurognosis*) of the world and the *operational environment*. Much of the evidence for pre- and perinatal cognitive/perceptual competence stands as evidence for the existence and importance of neurognosis.

Our notion of cognized environment is similar in many respects to the phenomenological concept of the "lifeworld" (Schutz and Luckman 1973; Husserl 1970), and differs only in that our concept implies a world of experience produced by neurobiological networks of the brain. We originally borrowed the terms "cognized" and "operational environments" from Rappaport (1968), but have substantially altered their meaning within biogenetic structural theory (see d'Aquili, Laughlin and McManus 1979:12ff.; Laughlin and Brady 1978:6ff.; Rubinstein, Laughlin and McManus 1984:21ff.; and Laughlin, McManus and d'Aquili 1990:chap. 3). For one thing, Rappaport does not imply as we do a neurocognitive substrate to the cognized environment. For another thing, Rappaport equates the operational environment with that described by science, whereas we treat scientific descriptions as cognized environments.

4. A bias that has long hampered our understanding of pre- and perinatal consciousness and cognitive competence is that neural structures must in some sense be complete in their development before they are able to function. This view has increasingly come into question (see Gottlieb 1976b; Klosovskii 1963; Klopf 1982:6) as theorists realize that nerve cells are not some sort of organic microchips that remain static until they are "wired-up" to networks, but rather are living, functioning organisms in their own right. A more realistic view is that the body of a pre- and perinatal child is comprised of hundreds of trillions of cells of many thousands of types and of every conceivable description. The child is in fact a community of cells; a community of discrete organisms that are, themselves, made up of various parts like membranes, mitochondria, organelles, and nuclei (Varela 1979; Laughlin, McManus and d'Aquili 1990). The nervous system is an organ or sub-community within the greater community of cells. Each of the nervous system's 1012 neurons is a goal-seeking unit that becomes more and more involved in a hierarchy of nested networks (Powers 1973; Klopf 1982:13; Varela 1979; Glassman and Wimsatt 1984). The nervous system is the organ of the body that specializes in the purposeful regulation of vital functions, tracking events in the world of phenomenal experience that it, itself, constitutes, and which organizes the myriad systems of the body into adaptively appropriate entrainments. Most importantly for our current purposes, the nervous system constructs a cognized environment within the context of which discrete events are cognitively evaluated (Granit 1977). Furthermore, the immature nervous system during the early months of prenatal life "comprises a roughed-in structure whose levels and subsystems are poised for coding of certain categories. The subsystems are neither wholly flexible nor wholly predestined players in a ballistic ontogenesis" (Glassman and Wimsatt (1984). The vast majority of cells comprising neural models are those that communicate only with other cells within close proximity ("local circuits"; see Uttley 1966; Rakic 1976).

5. Although, as Aslin (1985:157) notes, it is difficult to establish "the relative contribution of genetic and experiential factors to the ontogeny of individual members" of our species, it seems probable that consciousness and learning begin at some point in early gestation and develop rapidly and in tandem with the genetic factors controlling ontogenesis throughout the prenatal and perinatal period (Gottlieb 1983:5). Given the confines of our present knowledge, it is pointless to try to establish the exact stage at which the prenatal child is conscious, for different investigators have different conceptions of what constitutes "consciousness" and thus much intersubjective disagreement.

Furthermore, the data pertaining to when various functions arise in the course of prenatal development are often spotty or inconclusive. Anthropologists should be wary of considering any point of initial development of a function as fixed, for the tendency has been for the age of emergence of any particular function to be pushed back to earlier stages as new and more sensitive techniques of observation and experimentation are acquired. Also, it would be well to keep in mind three other factors when evaluating

these data: (1) the almost inevitable ethnocentricity of these studies, the subjects are usually Euroamerican in origin; (2) many subjects have undergone hospital births and obstetrical procedures; (3) the experimental research upon which conclusions are based frequently do not reflect the "real life," naturalistic situations so valued by ethnology (see also Murray and Trevarthen 1985:180; Edgerton 1974).

6. It is interesting that neurogenesis is prolonged in the hippocampus and continues well after birth. This may be related to delayed development of behavioural and memory functions of that area (Altman 1970; Altman, Brunner and Bayer 1973).

7. It is, of course, very difficult to know what a sleeping baby is experiencing. We know that the baby's brain is very active during sleep, and that it is in REM sleep most of the time. My suspicion has been for a long time that the younger the child (fetus/newborn), the more archetypal the dream symbolism is likely to be, and the older the child (from later infancy on), the more memories of events in the external operational environment will influence dream symbolism. There exist very little data on the matter so far.

8. E.R. Sorenson has also produced a film entitled *Growing Up as a Fore* (National Research Film Collection, Smithsonian Institution, Washington, D.C.) which covers infancy and childhood among a New Guinea people.

References Cited

Ainsworth, M.D.S.
   1967   Patterns of Infantile Attachment to Mother. *In* Behavior in Infancy and Early Childhood, edited by Yvonne Brackbill and George G. Thompson. New York: The Free Press.

Ainsworth, M.D.S., S.M. Bell and D. Stayton
   1972   Individual Differences in the Development of Some Attachment Behaviors. Merrill-Palmer Quarterly 18:123-144.

Ali, Z., and M. Lowry
   1981   Early Maternal-Child Contact: Effects on Later Behavior. Developmental Medicine and Child Neurology 23:337-345.

Altman, J.
   1970   Postnatal Neurogenesis and the Problem of Neural Plasticity. *In* Developmental Neurobiology, edited by W. Himwich. Springfield: Charles C. Thomas.

Altman, J., R.L. Brunner and S.A. Bayer
   1973   The Hippocampus and Behavioral Maturation. Behavioral Biology 8:557.

Antell, S.E., and D.P. Keating
   1983   Perception of Numerical Invariance in Neonates. Child Development 54:695-701.

Apgar, V.A.
   1953   Proposal for a New Method of Evaluation of the Newborn Infant. Anaesthesia and Analgesia, Current Researches 22:260.
   1962   Further Observations on the Newborn Scoring System. American Journal of Diseases of the Child 104:419.

Aslin, R.N.
   1985   Effects of Experience on Sensory and Perceptual Development: Implications for Infant Cognition. *In* Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited by J. Mehler and R. Fox. Hillsdale, New Jersey: Lawrence Erlbaum.

Aslin, R.N., D.B. Pisoni and P.W. Jusczyk
  1983   Auditory Development and Speech Perception in Infancy. *In* Handbook
          of Child Psychology, Vol. 2: Infancy and Developmental Psychobiology,
          edited by M.M. Haith and J.J. Campos. New York: Wiley.

Ayres, B.
  1973   Effects of Infant Carrying Practices on Rhythm in Music. Ethos
          1(4):387-404.

Baillargeon, R., E.S. Spelke and S. Wasserman
  1985   Object Permanence in Five-Month-Old Infants. Cognition 20:191-208.

Balashova, E.
  1963   Development of the Vestibular Apparatus. *In* The Development of the
          Brain and Its Disturbance by Harmful Factors, edited by B.N. Klosovskii.
          New York: Macmillan.

Banks, M.S.
  1988   Visual Recalibration and the Development of Contrast and Optical Flow
          Preception. *In* Perceptual Development in Infancy, edited by A. Yonas.
          Hillsdale, New Jersey: Erlbaum.

Banks, M.S., and P. Salapatek
  1983   Infant Visual Perception. *In* Handbook of Child Psychology, Vol. 2:
          Infancy and Developmental Psychobiology, edited by M.M. Haith and
          J.J. Campos. New York: Wiley.

Barlow, H.B., and J.D. Mollon, eds.
  1982   The Senses. Cambridge: Cambridge University Press.

Barrett, J.H.W.
  1981   Intra-uterine Experience and its Long-term Outcome. *In* Foundations of
          Psychosomatics, edited by M. Christie and P. Mellett. New York: Wiley.
  1982   Prenatal Influences on Adaptation in the Newborn. *In* Psychobiology of
          the Human Newborn, edited by P. Stratton. New York: Wiley.

Bates, E., et al.
  1986   Language and Hand Preference in Early Development. Developmental
          Neuropsychology 2(1):1-15.

Becker, M.G., W. Isaac and G.W. Hynd
  1987   Neuropsychological Development of Nonverbal Behaviors Attributed to
          "Frontal Lobe" Functioning. Developmental Neuropsychology 3(3-
          4):275-298.

Bekoff, M., and M. Fox
  1972   Postnatal Neural Ontogeny. Developmental Psychology 5:323.

Birch, E., and R. Held
  1983   The Development of Binocular Summation in Human Infants. Investiga-
          tive Ophthalmology and Visual Science 24:1103-1107.

Blackbill, Y., et al.
  1974   Obstetric Pre-Medication and Infant Outcome. American Journal of
          Obstetrics and Gynecology 118:116-120.

Blakemore, C.
  1974   Developmental Factors in the Formation of Feature Extracting Neurons.
          In The Neurosciences Third Study Program, edited by F.O. Schmitt and
          F.G. Worden. Cambridge: MIT Press.

Blount, B.G.
  1972   Parental Speech and Language Acquisition. Anthropological Linguistics
          14:119-130.
  1977   Ethnography and Caretaker-Child Interaction. *In* Talking to Children,
          edited by C.E. Snow and C.A. Ferguson. Cambridge: Cambridge Univer-
          sity Press.
Bornstein, M.H.
  1985   Infant into Adult: Unity to Diversity in the Development of Visual
          Categorization. *In* Neonate Cognition: Beyond the Blooming Buzzing
          Confusion, edited by J. Mehler and R. Fox. Hillsdale, New Jersey: Erl-
          baum.
Bornstein, M.H., and M.D. Sigman
  1986   Continuity in Mental Development from Infancy. Child Development
          57:251-274.
Bower, T.G.R.
  1974   Development in Infancy. San Francisco: Freeman.
Bower, T.G.R., and J.G. Wishart
  1979   Toward a Unitary Theory of Development. *In* Origins of the Infant's
          Social Responsiveness, edited by E.B. Thoman. Hillsdale, New Jersey:
          Erlbaum.
Bowlby, J.
  1969   Attachment and Loss, Vol. 1: Attachment. New York: Basic Books.
  1972   Attachment and Loss, Vol. 2: Separation. New York: Basic Books.
Braddick, O., and J. Atkinson
  1988   Sensory Selectivity, Attentional Control, and Cross-Channel Integration
          in Early Visual Development. *In* Perceptual Development in Infancy,
          edited by A. Yonas. Hillsdale, New Jersey: Erlbaum.
Brazelton, T.B., and H. Als
  1979   Four Early Stages in the Development of Mother-Infant Interaction. The
          Psychosomatic Study of the Child 34:349-369.
Brazelton, T.B., B. Koslowski and E. Tronic
  1977   Neonatal Behavior Among Urban Zambians and Americans. *In* Annual
          Progress in Child Psychiatry and Child Development, edited by S. Chess
          and A. Thomas. New York: Brunner and Mazel Publishers.
Bronson, G.W.
  1982   Structure, Status, and Characteristics of the Nervous System at Birth. *In*
          Psychobiology of the Human Newborn, edited by P. Stratton. New York:
          Wiley.
Bullowa, M.
  1979   Before Speech: The Beginning of Interpersonal Communication. Cam-
          bridge: Cambridge University Press.
Bullowa, M., J.L. Fidelholtz and A.R. Kessler
  1975   Infant Vocalization: Communication Before Speech. *In* Socialization and
          Communication in Primary Groups, edited T.R. Williams. The Hague:
          Mouton.
Burnham, D.K.
  1987   The Role of Movement in Object Perception by Infants. *In* Perceptual
          Development in Early Infancy: Problems and Issues, edited by B.E.

McKenzie and R.H. Day. Hillsdale, New Jersey: Erlbaum.

Busnel, M.-C., and C. Granier-Deferre
1983   And What of Fetal Audition? *In* The Behavior of Human Infants, edited
        by A. Oliverio and M. Zappella. New York: Plenum.

Butterworth, G., and L. Grover
1988   The Origins of Referential Communication in Human Infancy. *In*
        Thought Without Language, edited by L. Weiskrantz. Oxford: Clarendon
        Press.

Campos, J.J., et al.
1983   Socioemotional Development. *In* Handbook of Child Psychology, Vol. 2:
        Infancy and Developmental Psychobiology, edited by M.M. Haith and
        J.J. Campos. New York: Wiley.

Chamberlain, D.B.
1983   Consciousness at Birth. San Diego, California: Chamberlain Commu-
        nication.
1989   Babies Remember Pain. Pre- and Perinatal Psychology 3(4):297-310.

Changeux, J.-P.
1985   Remarks on the Complexity of the Nervous System and Its Ontogenesis.
        In Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited
        by J. Mehler and Robin Fox. Hillsdale, New Jersey: Erlbaum.

Cheek, D.B.
1974   Sequential Head and Shoulder Movements Appearing with Age Regres-
        sion in Hypnosis to Birth. American Journal of Clinical Hypnosis
        16(4):261-266.

Chisholm, J.S.
1983   Navajo Infancy: An Ethological Study of Child Development. New York:
        Aldine.

Colombo, J., D.W. Mitchell and F.D. Horowitz
1988   Infant Visual Attention in the Paired-Comparison Paradigm: Test-Retest
        and Attention-Performance Relations. Child Development 59:1198-1210.

Cook, M.
1987   The Origins of Form Perception. Perceptual Development in Early
        Infancy: Problems and Issues, edited by B.E. McKenzie and R.H. Day.
        Hillsdale, New Jersey: Erlbaum.

Curran, H.V.
1984   Nigerian Children: Developmental Perspectives. London: Routledge and
        Kegan Paul.

Cutting, J., and P.D. Eimas
1975   Phonetic Feature Analyzers and the Processing of Speech in Infants. *In*
        The Role of Speech in Language, edited by J.F. Kavanaugh and J.E. Cut-
        ting. Cambridge, Maryland: MIT Press.

D'Aquili, E.G., C.D. Laughlin and J. McManus
1979   The Spectrum of Ritual. New York: Columbia University Press.

Dasen, P.R., ed.
1977   Piagetian Psychology: Cross-Cultural Contributions. New York: Gardner
        Press.

Dasen, P.R., and A. Heron
1981   Cross-Cultural Tests of Piaget's Theory. *In* Handbook of Cross-Cultural

Psychology, Developmental Psychology, Vol. 4, edited by Harry C. Triandis and Alastair Heron. Boston: Allyn & Bacon Inc.

Davis-Floyd, R.E.
1987   Obstetric Training as a Rite of Passage. Medical Anthropology Quarterly 1(3, NS):288-318.
1990   Obstetrical Rituals and Cultural Anomaly. Pre- and Perinatal Psychology Journal.

Day, R.H.
1987   Visual Size Constancy in Infancy. *In* Perceptual Development in Early Infancy: Problems and Issues, edited by B.E. McKenzie and R.H. Day. Hillsdale, New Jersey: Erlbaum.

De Boysson-Bardies, B., L. Sagart and C. Durand
1984   Discernible Differences in the Babbling of Infants According to Target Language. Journal of Child Language 11:1-15.

DeCasper, A.J., and W.P. Fifer
1980   Of Human Bonding: Newborns Prefer Their Mothers' Voices. Science 208:1174-1176.

De Mause, L.
1981   Fetal Origins of History. The Journal of Psychohistory 9(1):1-89.

Devereux, G.
1964   Mohave Voice and Speech Mannerisms. *In* Language in Culture and Society, edited by D. Hymes. New York: Harper & Row.

Dhopeshwarkar, G.A.
1983   Nutrition and Brain Development. New York: Plenum.

Diamond, A.
1988   Differences Between Adult and Infant Cognition: Is the Crucial Variable Presence or Absence of Language? *In* Thought Without Language, edited by L. Weiskrantz. New York: Oxford University Press.

Diamond, M.C.
1988   Enriched Heredity: The Impact of the Environment on the Anatomy of the Brain. New York: Free Press.

Dodd, B.
1979   Lip Reading in Infants: Attention to Speech Presented In- and Out-of-Synchrony. Cognitive Psychology 11:478-484.

Doty, R.W.
1975   Consciousness from Matter. Acta Neurobiologiae Experimentalis 35:791-804.

Edgerton, R.B.
1974   Cross-cultural Psychology and Psychological Anthropology: One Paradigm or Two? Reviews in Anthropology 1 (1):52-64.

Eibl-Eibesfeldt, I.
1983   Patterns of Parent-Child Interaction in a Cross-Cultural Perspective. *In* The Behavior of Infants, edited by A. Oliverio and M. Zappella. New York: Plenum.

Eimas, P.D.
1985   Constraints on a Model of Infant Speech Perception. *In* Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited by J. Mehler and R. Fox. Hillsdale, New Jersey: Erlbaum.

Eimas, P.D., and J.D. Corbit
  1973   Selective Adaptation of Linguistic Feature Detectors. Cognitive Psychol-
          ogy 4:99-109.
Eimas, P.D., J.L. Miller and P.W. Jusczyk
  1987   On Infant Speech Perception and the Acquisition of Language. *In* Cate-
          gorical Perception, edited by S. Harnad. New York: Cambridge Univer-
          sity Press.
Eisenberg, R.B.
  1975   Auditory Competence in Early Life. Baltimore, Maryland: University
          Park Press.
Eliade, M.
  1958   Birth and Rebirth: The Religious Meanings of Initiation in Human Cul-
          ture, translated by Willard R. Trask. New York: Harper.
Elkington, J.
  1985   The Poisoned Womb: Human Reproduction in a Polluted World. New
          York: Viking.
Entus, A.K.
  1977   Hemispheric Asymmetry in Processing of Dichotically Presented Speech
          and Nonspeech Stimuli by Infants. *In* Language Development and Neu-
          rological Theory, edited by S.J. Segalowitz and F.A. Gruber. New York:
          Academic Press.
Fagan, J.F.
  1974   Infant Recognition Memory: The Effects of Length of Familiarization
          and Type of Discrimination Task. Child Development 45:351-356.
  1984a   The Intelligent Infant: Theoretical Implications. Intelligence 8:1-9.
  1984b   The Relationship of Novelty Preferences During Infancy to Later Intelli-
          gence and Later Recognition Memory. Intelligence 8:339-346.
Fagan, J.F., et al.
  1986   Selective Screening Device for the Early Detection of Normal or Delayed
          Cognitive Development in Infants at Risk for Later Mental Retardation.
          Pediatrics 78(6):1021-1026.
Ferguson, C.A.
  1977   Baby Talk as a Simplified Register. *In* Talking to Children, edited by C.E.
          Snow and C.A. Ferguson. Cambridge: Cambridge University Press.
Field, J.
  1987   The Development of Auditory-Visual Localization in Infancy. *In* Percep-
          tual Development in Early Infancy: Problems and Issues, edited by B.E.
          McKenzie and R.H. Day. Hillsdale, New Jersey: Erlbaum.
Field, T.
  1985   Neonatal Perception of People: Maturation and Individual Differences. *In*
          Social Perception in Infants, edited by T.M. Field and N.A. Fox. Nor-
          wood, New Jersey: Ablex Publishing Co.
Field, T.M., et al.
  1981   Culture and Early Interactions. Hillside, New Jersey: Erlbaum.
Field, T.M., et al.
  1982   Discrimination and Imitation of Facial Expressions by Neonates. Science
          218:179-181.

Ford, C.S.
  1945   A Comparative Study of Human Reproduction. Yale University Publica-
          tions in Anthropology, 32. New Haven: Yale University Press.
Ford, C.S.
  1964   Field Guide to the Study of Human Reproduction. New Haven: H.R.A.F.
          Press.
Fox, N.A.
  1985   Sweet/Sour — Interest/Disgust: The Role of Approach-Withdrawal in the
          Development of Emotions. *In* Social Perception in Infants, edited by
          T.M. Field and N.A. Fox. Norwood, New Jersey: Ablex.
Freedman, D.G.
  1979   Human Sociobiology: A Holistic Approach. New York: Free Press.
Fries, M.E.
  1977   Longitudinal Study: Prenatal Period to Parenthood. Journal of the Amer-
          ican Psychoanalytic Association 25:115-140.
Ganchrow, J., J. Steiner and M. Daher
  1983   Neonatal Facial Expressions in Response to Different Qualities and
          Intensities of Gustatory Stimuli. Infant Behavior and Development
          6:189-200.
Gellhorn, E.
  1968   Attempt at a Synthesis and Contribution to a Theory of Emotion. *In* Bio-
          logical Foundations of Emotion, edited by E. Gellhorn. New York: Scott,
          Foresman.
Gellhorn, E., and W.F. Kiely
  1972   Mystical States of Consciousness: Neurophysiological and Clinical
          Aspects. Journal of Nervous and Mental Diseases 154:399-405.
Gibson, E.J.
  1969   Principles of Perceptual Learning and Development. New York:
          Appleton-Century-Crofts.
Glassman, R.B., and W.C. Wimsatt
  1984   Evolutionary Advantages and Limitations of Early Plasticity. *In* Early
          Brain Damage, Vol. 1: Research Orientations and Clinical Observations,
          edited by C.R. Almli and S. Finger. New York: Academic Press.
Goldman, L.R.
  1987   Ethnographic Interpretation of Parent-Child Discourse in Huli. Journal of
          Child Language 14:447-466.
Gootman, P.M., ed.
  1986   Developmental Neurobiology of the Autonomic Nervous System. Clif-
          ton, New Jersey: Humana Press.
Gottlieb, G.
  1971   Ontogenesis of Sensory Function in Birds and Mammals. *In* The Bio-
          psychology of Development, edited by E. Tobach, L.R. Aronson and E.
          Shaw. New York: Academic Press.
  1976a   The Roles of Experience in the Development of Behavior and the Ner-
          vous System. Neural and Behavioral Specificity, edited by G. Gottlieb.
          New York: Academic Press.
  1976b   Conceptions of Prenatal Development. Psychological Review 83(3):
          215-234.

1983   The Psychobiological Approach to Developmental Issues. *In* Handbook
        of Child Psychology, Vol. 2: Infancy and Developmental Psychobiology,
        edited by M.M. Haith and J.J. Campos. New York: Wiley.

Gottlieb, G., and N.A. Krasnegor
    1985   Measurement of Audition and Vision in the First Year of Postnatal Life:
            A Methodological Overview. Norwood, New Jersey: Ablex.

Granit, R.
    1977   The Purposive Brain. Cambridge, Massachusetts: MIT Press.

Grof, S.
    1976   Realms of the Human Unconscious. New York: The Viking Press.
    1979   LSD Psychotherapy. Pomona, California: Hunter House.
    1985   Beyond the Brain: Birth, Death, and Transcendence in Psychotherapy.
            Albany: SUNY Press.
    1988   The Adventure of Self Discovery. Albany: SUNY Press.

Haith, M.M.
    1980   Rules that Babies Look By: The Organization of Newborn Visual Activ-
            ity. Hillsdale, New Jersey: Erlbaum.

Harnad, S., ed.
    1987   Categorical Perception: The Grounding of Cognition. New York: Cam-
            bridge University Press.

Held, R.
    1985   Binocular Vision: Behavioral and Neuronal Development. *In* Neonate
            Cognition: Beyond the Blooming Buzzing Confusion, edited by J.
            Mehler and R. Fox. Hillsdale, New Jersey: Lawrence Erlbaum.

Herskovits, M.J.
    1948   Man and His Works. New York: Alfred Knopf.

Hofer, M.A.
    1974   The Role of Early Experience in the Development of Autonomic Regula-
            tion. *In* Limbic and Autonomic Nervous Systems Research, edited by
            Leo V. DiCara. New York: Plenum.

Hogan, H.M.
    1968   An Ethnography of Communication Among the Ashanti. Penn-Texas
            Working Papers in Sociolinguistics, No. 1. Austin: University of Texas.

Hollander, H.
    1979   Historical Review and Clinical Relevance of Real-Time Observations of
            Fetal Movement. Contributions to Gynecology and Obstetrics 6:26-28.

Hollenbeck, A.R., et al.
    1986   Neonates Prenatally Exposed to Anesthetics: Four-Year Follow-Up.
            Child Psychiatry and Human Development 17(1):66-70.

Hubel, D.H., and T.N. Wiesel
    1962   Receptive Fields, Binocular Interaction and Functional Architecture in
            the Cat's Visual Cortex. Journal of Physiology 160:106-154.

Husserl, E.
    1970   The Crisis of European Sciences and Transcendental Phenomenology.
            Evanston: Northwestern University Press.

Imbert, M.
    1985   Physiological Underpinnings of Perceptual Development. *In* Neonate

Cognition: Beyond the Blooming Buzzing Confusion, edited by J. Mehler and R. Fox. Hillsdale, New Jersey: Erlbaum.

Izard, C.E.
1977   Visual Attention in Infancy: Processes, Methods and Clinical Applications. *In* The Structure of Experience, edited by T.C. Uzgiris and T. Weizmann. New York: Plenum.

Janov, A.
1972   The Primal Revolution. New York: Simon and Shuster.
1983   Imprints: The Lifelong Effects of Birth Experience. New York: Coward-McCann.

Jerison, H.J.
1973   Evolution of the Brain and Intelligence. New York: Academic Press.

Joffe, J.M.
1969   Prenatal Determinants of Behavior. Oxford: Pergamon.

Jordan, B.
1978   Birth In Four Cultures: A Crosscultural Investigation of Childbirth in Yucatan, Holland, Sweden and the United States. St. Albans, Vermont: Eden Press Women's Publications, Inc.

Jusczyk, P.W.
1985   On Characterizing the Development of Speech Perception. *In* Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited by J. Mehler and R. Fox. New Jersey: Erlbaum.

Kay, M.A., ed.
1982   Anthropology of Human Birth. Philadelphia: F.A. Davis.

Kellman, P.J., and E.S. Spelke
1983   Perception of Partly Occluded Objects in Infancy. Cognitive Psychology 15:483-528.

Kinsbourne, M., and M. Hiscock
1983   The Normal and Deviant Development of Functional Lateralization of the Brain. *In* Handbook of Child Psychology, Vol. 2: Infancy and Developmental Psychobiology, edited by M.M. Haith and J.J. Campos. New York: Wiley.

Kjellmer, I.
1981   Fetal Cardiovascular Reactions During Labour and Asphyxia Modified by Adrenergic Receptor Agonists and Antagonists. Development of the Autonomic Nervous System (Ciba Foundation Symposium 83). London: Pitman Medical.

Klopf, A.H.
1982   The Hedonistic Neuron: A Theory of Memory, Learning and Intelligence. New York: Hemisphere Publishing Co.

Klosovskii, B.N.
1963   Fundamental Facts Concerning the Stages and Principles of Development of the Brain and Its Response to Noxious Agents. *In* The Development of the Brain and Its Disturbance by Harmful Factors, edited by B.N. Klosovskii. New York: Macmillan.

Konner, M.J.
1981   Foreward. *In* Culture and Early Interactions, edited by T.M. Field, A.M. Sostek, P. Vietze and P.H. Leiderman. Hillsdale, New Jersey: Erlbaum.

Kuhl, P.K., and A.N. Meltzoff
  1988   Speech as an Intermodal Object of Perception. *In* Perceptual Develop-
          ment in Infancy, edited by A. Yonas. Hillsdale, New Jersey: Erlbaum.
Lagercrantz, H., and P. Bistoletti
  1973   Catecholamine Release in the Newborn Infant at Birth. Pediatric
          Research 11:889-893.
Laing, R.D.
  1982   The Voice of Experience. London: Allen Lane.
Lamire, R.J., et al.
  1975   Normal and Abnormal Development of the Human Nervous System.
          New York: Harper & Row.
Landauer, T.K., and Whiting, J.W.M.
  1964   Infantile Stimulation and Adult Stature of Human Males. American
          Anthropologist 66:1007-1019.
Langworthy, V.R.
  1933   Development of Behavior Patterns and Myelinization of the Nervous
          System in the Human Fetus and Infant. Contributions to Embryology 24,
          No. 139. Washington, D.C.: Carnegie Institute.
Larroche, J.C.
  1966   The Development of the Central Nervous System During Intrauterine
          Life. *In* Human Development, edited by F. Falkner. Philadelphia: W.B.
          Saunders.
Laughlin, C.D.
  1985   Womb=Woman=World: Gender and Transcendence in Tibetan Tantric
          Buddhism. Pre- and Perinatal Psychology, special spring issue, pp. 18-26.
  1988   The Prefrontosensorial Polarity Principle: Toward a Neurophenomeno-
          logical Theory of Intentionality. Biological Forum 81(2):245-262.
  1989   Pre- and Perinatal Anthropology: A Selective Review. Pre- and Perinatal
          Psychology 3(4):261-296.
Laughlin, C.D., and I.A. Brady
  1978   Extinction and Survival in Human Populations. New York: Columbia
          University Press.
Laughlin, C.D., and E.G. d'Aquili
  1974   Biogenetic Structuralism. New York: Columbia University Press.
Laughlin, C.D., J. McManus and E.G. d'Aquili
  1990   Brain, Symbol and Experience: Toward a Neurophenomenology of
          Human Consciousness. Boston: Shambhala New Science Library.
Leslie, A.M.
  1988   The Necessity of Illusion: Perception and Thought in Infancy. *In* Thought
          Without Language, edited by L. Weiskrantz. Oxford: Clarendon Press.
Levenson, R.W.
  1988   Emotion and the Autonomic Nervous System: A Prospectus for Research
          on Autonomic Specificity. *In* Social Psychophysiology and Emotion:
          Theory and Clinical Applications, edited by H.L. Wagner. New York:
          Wiley.
LeVine, R.A.
  1980   Anthropology and Child Development. *In* New Directions For Child
          Development: Anthropological Perspectives on Child Development,

edited by Charles M. Super and Sara Harkness. San Francisco: Jossey-Bass Inc.

1982   Culture, Behavior and Personality. 2nd ed. New York: Aldine.

Lewis, M., J. Jaskir and M.K. Enright
1986   The Development of Mental Abilities in Infancy. Intelligence 10:331-354.

Lewkowicz, D., and G. Turkewitz
1980   Cross-Modal Equivalence in Early Infancy: Auditory-Visual Intensity Matching. Developmental Psychology 16:596-607.

Lex, B.W.
1979   The Neurobiology of Ritual Trance. *In* The Spectrum of Ritual, edited by E.G. d'Aquili, C.D. Laughlin and J. McManus. New York: Columbia University Press.

Liedloff, J.
1975   The Continuum Concept. London: Future Publications.

Liley, A.W.
1972   The Foetus as a Personality. Australia and New Zealand Journal of Psychiatry 6:99-105.

Lipsitt, L.P.
1979   The Pleasures and Annoyances of Infants: Approach and Avoidance Behavior. *In* Origins of Infants' Social Responsiveness, edited by E.B. Thoman. Hillsdale, New Jersey: Erlbaum.

Lowrey, G.H.
1973   Growth and Development in Children. 6th ed. Chicago: Year Book Medical Publications.

MacCormack, C.P., ed.
1982   Ethnography of Fertility and Birth: A Synthesis. London: Academic Press.

Maurer, D., and C. Maurer
1988   The World of the Newborn. New York: Basic Books.

Mayer, N.K., and E.Z. Tronick
1985   Mothers' Turn-Giving and Infant Turn-Taking in Mother-Infant Interaction. *In* Social Perception in Infants, edited by T.M. Field and N.A. Fox. Norwood, New Jersey: Ablex.

McFarlane, A.
1975   Olfaction in the Development of Social Preferences in the Human Neonate. Parent Infant Interaction (Ciba Foundation Symposium 33). Amsterdam: Elsevier.

McKinnon, W., A. Baum and P. Morokoff
1988   Neuroendocrine Measures of Stress. *In* Social Psychophysiology and Emotion: Theory and Clinical Applications, edited by H.L. Wagner. New York: Wiley.

Mead, M., and F.C. MacGregor
1951   Growth and Culture: A Photographic Study Of Balinese Childhood. New York: G. P. Putnam's Sons.

Mead, M., and Newton, N.
1967   Cultural Patterning of Perinatal Behaviour. *In* Childbearing — Its Social and Psychological Aspects, edited by S.A. Richardson and A.F.

Guttmacher. Washington: Williams and Wilkins Company.

Mehler, J., and R. Fox
  1985   Neonate Cognition: Beyond the Blooming Buzzing Confusion. Hillsdale,
          New Jersey: Erlbaum.

Meltzoff, A.N.
  1985   The Roots of Social and Cognitive Development: Models of Man's
          Original Nature. *In* Social Perception in Infants, edited by T.M. Field and
          N.A. Fox. Norwood, New Jersey: Ablex.

Meltzoff, A.N., and R.W. Borton
  1979   Intermodal Matching by Human Neonates. Nature 282:403-404.

Meltzoff, A.N., and M.K. Moore
  1983a   Newborn Infants Imitate Adult Facial Gestures. Child Development
          54:702-709.
  1983b   The Origins of Imitation in Infancy: Paradigm, Phenomena, and Theories.
          In Advances in Infancy Research, Vol. 2, edited by L.P. Lipsitt. Nor-
          wood, New Jersey: Ablex.
  1985   Cognitive Foundations and Social Functions of Imitation and Intermodal
          Representation in Infancy. *In* Neonate Cognition: Beyond the Blooming
          Buzzing Confusion, edited by J.Mehler and R. Fox. Hillsdale New Jer-
          sey: Erlbaum.

Merleau-Ponty, M.
  1964   The Primacy of Perception. Evanston, Illinois: Northwestern University
          Press.
  1968   The Visible and the Invisible. Evanston, Illinois: Northwestern Univer-
          sity Press.

Molfese, D.L.
  1977   Infant Cerebral Asymmetry. *In* Language Development and Neurological
          Theory, edited by S.J. Segalowitz and F.A. Gruber. New York: Academic
          Press.

Moore, K.L.
  1982   The Developing Human: Clinically Oriented Embryology. 3rd ed. Phi-
          ladelphia: W.B. Saunders.

Morinis, A.
  1985   The Ritual Experience. Ethos 13(2):150-174.

Moss, M., et al.
  1988   Neonatal Behavioral Organization and Visual Processing at Three
          Months. Child Development 59:1211-1220.

Mounoud, P.
  1988   The Ontogenesis of Different Types of Thought: Language and Motor
          Behaviours as Non-Specific Manifestations. *In* Thought Without Lan-
          guage, edited by L. Weiskrantz. Oxford: Clarendon Press.

Murray, L., and C. Trevarthen
  1985   Emotional Regulation of Interactions Between Two-Month-Olds and
          Their Mothers. *In* Social Perception in Infants, edited by T.M. Field and
          N.A. Fox. Norwood, New Jersey: Ablex.

Nakae, K.
  1983   A Historical Study of the Thought of 'Taikyo.' Japanese Journal of Edu-
          cational Research 50:343-352.

Neumann, E.
  1963   The Great Mother. Princeton: Princeton University Press.
Newman, L.F.
  1972   The Anthropology of Birth. Sociological Symposium 8:51-63.
Newton, N.
  1970   The Effect of Psychological Environment on Childbirth: Combined
          Cross-Cultural and Experimental Approach. Journal of Cross-Cultural
          Psychology 1(1):85-90.
Nonneman, A.J., et al.
  1984   Functional Development of the Prefrontal System. *In* Early Brain Dam-
          age, Vol. 2: Neurobiology and Behavior, edited by S. Finger and C.R.
          Almli. New York: Academic Press.
Oldfield, R.C.
  1971   The Assessment and Analysis of Handedness: The Edinburgh Inventory.
          Neuropsychologia 9:97-113.
Oller, D.K., et al.
  1976   Infant Babbling and Speech. Journal of Child Language 3:1-11.
Oppenheim, R.W., and L. Haverkamp
  1986   Early Development of Behavior and the Nervous System. *In* Handbook
          of Behavioral Neurobiology, Vol. 8: Developmental Psychobiology and
          Developmental Neurobiology, edited by E.M. Blass. New York: Plenum.
Over, R.
  1987   Can Human Neonates Imitate Facial Gestures? *In* Perceptual Develop-
          ment in Early Infancy: Problems and Issues, edited by B.E. McKenzie
          and R.H. Day. Hillsdale, New Jersey: Erlbaum.
Papousek, H., and M. Papousek
  1982   Integration into the Social World: Survey of Research. *In* Psychobiology
          of the Human Newborn, edited by P. Stratton. New York: Wiley.
Papousek, M., H. Papousek and M.H. Bornstein
  1985   The Naturalistic Vocal Environment of Young Infants: On the
          Significance of Homogeneity and Variability in Parental Speech. *In*
          Social Perception in Infants, edited by T.M. Field and N.A. Fox. Nor-
          wood, New Jersey: Ablex.
Parmelee, A.H., and M.D. Sigman
  1983   Perinatal Brain Development and Behavior. *In* Handbook of Child Psy-
          chology, Vol. 2: Infancy and Developmental Psychobiology, edited by
          M.M. Haith and J.J. Campos. New York: Wiley.
Parvez, H., and S. Parvez, eds.
  1980   Biogenic Amines in Development. Amsterdam: Elsevier.
Ploye, P.M.
  1973   Does Prenatal Mental Life Exist? International Journal of Psychoanalysis
          54:241-246.
Powers, W.T.
  1973   Behavior: The Control of Perception. Chicago: Aldine.
Prechtl, H.F.R.
  1982   Assessment Methods for the Newborn Infant: A Critical Evaluation. *In*
          Psychobiology of the Human Newborn, edited by P. Stratton. New York:
          Wiley.

Purves, D.
  1988   Body and Brain: A Trophic Theory of Neural Connections. Cambridge,
          Massachusetts: Harvard University Press.
Rakic, P.
  1976   Local Circuit Neurons. Cambridge: MIT Press.
Rappaport, R.A.
  1968   Pigs for the Ancestors. New Haven: Yale University Press.
Renner, M.J., and M.R. Rosenzweig
  1987   Enriched and Impoverished Environments. New York: Springer-Verlag.
Rogers, M.C., and J.B. Richmond
  1978   The Autonomic Nervous System. In Perinatal Physiology, edited by U.
          Stave. New York: Plenum Medical Book Company.
Rose, S.A.
  1981   Lags in Cognitive Competence of Prematurely Born Infants. In Preterm
          Birth and Psychological Development, edited by S.L. Friedman and M.
          Sigman. New York: Academic Press.
Rose, S.A., J.F. Feldman and I.F. Wallace
  1988   Individual Differences in Infants' Information Processing: Reliability,
          Stability, and Prediction. Child Development 59:1177-1197.
Rosen, G.D., and A.M. Galaburda
  1985   Development of Language: A Question of Asymmetry and Deviation. In
          Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited by
          J. Mehler and R. Fox. Hillsdale, New Jersey: Erlbaum.
Rovee-Collier, C.K., and L.P. Lipsitt
  1982   Learning, Adaptation, and Memory in the Newborn. In Psychobiology of
          the Human Newborn, edited by P. Stratton. New York: Wiley.
Rubinstein, R.A., C. Laughlin and J. McManus
  1984   Science as Cognitive Process. Philadelphia: University of Pennsylvania
          Press.
Sameroff, A.J., and P.J. Cavanaugh
  1979   Learning in Infancy: A Developmental Perspective. In Handbook of
          Infant Development, edited by J. Osofsky. New York: Wiley.
Sanders-Phillips, K., M.E. Strauss and R.L. Gutberlet
  1988   The Effect of Obstetric Medication on Newborn Infant Feeding Behavior.
          Infant Behavior and Development 11:251-263.
Sarnat, H.B., and M.G. Netsky
  1974   Evolution of the Nervous System. New York: Oxford University Press.
Schell, L.M.
  1981   Environmental Noise and Human Prenatal Growth. American Journal of
          Physical Anthropology 56:63-70.
Schneirla, T.C.
  1959   An Evolutionary and Developmental Theory of Motivation Underlying
          Approach and Withdrawal. Nebraska Symposium on Motivation 7:1-42.
Schreiber, J.M.
  1977   On Becoming Human. Reviews in Anthropology 4: 378-385.
Schutz, A., and T. Luckmann
  1973   The Structures of the Life-World. London: Heinemann.

Snow, C.E., and C.A. Ferguson
   1977   Talking To Children: Language Input and Acquisition. Cambridge: Cambridge University Press.
Sontag, L.W.
   1941   The Significance of Fetal Environmental Differences. American Journal of Obstetrics and Gynecology 42: 996-1003.
Sorenson, E.R.
   1976   The Edge of the Forest: Land, Childhood and Change in a New Guinea Protoagricultural Society. Washington, D.C.: Smithsonian Institution Press.
Spelke, E.S.
   1979   Perceiving Bimodally Specified Events in Infancy. Developmental Psychology 15:626-636.
   1985   Perception of Unity, Persistence, and Identity: Thoughts on Infants' Conceptions of Objects. *In* Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited by J. Mehler and R. Fox. Hillsdale, New Jersey: Erlbaum.
   1988a   Where Perceiving Ends and Thinking Begins: The Apprehension of Objects in Infancy. *In* Perceptual Development in Infancy, edited by A. Yonas. Hillsdale, New Jersey: Erlbaum.
   1988b   The Origins of Physical Knowledge. *In* Thought Without Language, edited by L. Weiskrantz. Oxford: Clarendon Press.
Spelke, E.S., and R. Kestenbaum
   1986   Les origines du concept d'objet. Psychologie Francaise 31:67-72.
Spreen, O., et al.
   1984   Human Developmental Neuropsychology. New York: Oxford University Press.
Stave, U.
   1978   Perinatal Physiology. New York: Plenum Medical Book Co.
Steiner, J.
   1979   Human Facial Expressions in Response to Taste and Smell Stimulation. *In* Advances in Child Development and Behavior, Vol. 13, edited by H.W. Reese and L.P. Lipsitt. New York: Academic Press.
Streissguth, A.P., et al.
   1989   IQ at Age 4 in Relation to Maternal Alcohol Use and Smoking During Pregnancy. Developmental Psychology 25(1):3-11.
Streri, A., and E.S. Spelke
   1988   Haptic Perception of Objects in Infancy. Cognitive Psychology 20:1-23.
Stuss, D.T., and D.F. Benson
   1986   The Frontal Lobes. New York: Raven.
Sugarman, M.
   1977   Perinatal Influences on Maternal-Infant Attachment. American Journal of Orthopsychiatry 48:407-421.
Thompson, D.W.
   1917   On Growth and Form. New York: Cambridge University Press.
Treiber, F., and S. Wilcox
   1980   Perception of a "Subjective" Contour by Infants. Child Development 51:915-917.

Trevarthen, C.
  1983a   Emotions in Infancy: Regulators of Contacts and Relationships with Per-
           sons. *In* Approaches to Emotion, edited by K. Scherer and P. Ekman.
           Hillsdale, New Jersey: Erlbaum.
  1983b   Interpersonal Abilities of Infants As Generators for Transmission of Lan-
           guage and Culture. *In* The Behavior of Infants, edited by A. Oliverio and
           M. Zappella. New York: Plenum.
Trevathan, W.R.
  1987   Human Birth: An Evolutionary Perspective. New York: Aldine de
           Gruyter.
  In press The Evolution of Helplessness in the Human Infant and Its Significance
           for Pre- and Peri-natal Psychology. Pre- and Peri-Natal Psychology.
Turkewitz, G., and S. Creighton
  1974   Changes in Lateral Differentiation of Head Posture in the Human
           Neonate. Developmental Psychobiology 8:85-89.
Turkewitz, G., and P.A. Kenny
  1982   Limitations on Input as a Basis for Neural Organization and Perceptual
           Development: A Preliminary Theoretical Statement. Developmental
           Psychobiology 15(4):357-368.
Ungerer, J., L. Brody and P. Zelazo
  1978   Long-Term Memory for Speech in 2- to 4-Week-Old Infants. Infant
           Behavior and Development 1:127-140.
Uttley, A.M.
  1966   The Transmission of Information and the Effect of Local Feedback in
           Theoretical and Neural Networks. Brain Research 2:21-50.
Van Hof, M.W., and E.M.W.W. de Blecourt
  1984   Early Brain Damage Due to Hypoxia. *In* Early Brain Damage, Vol. 1:
           Research Orientations and Clinical Observations, edited by C.R. Almli
           and S. Finger. New York: Academic Press.
Varela, F.J.
  1979   Principles of Biological Autonomy. New York: Elsevier North Holland.
Verny, T.R.
  1982   The Secret Life of the Unborn Child. New York: Dell.
  1987   Pre- and Perinatal Psychology: An Introduction. New York: Human Sci-
           ences Press.
Visser, G.H.A., et al.
  1985   Abnormal Motor Behavior in Anencephalic Fetuses. Early Human
           Development 12:173-183.
Waterson, N., and C. Snow, eds.
  1978   The Development of Communication. New York: Wiley.
Weiskrantz, L.
  1988   Thought Without Language. Oxford: Clarendon Press.
Welsh, M.C., and B.F. Pennington
  1988   Assessing Frontal Lobe Functioning in Children: Views From Develop-
           mental Psychology. Developmental Neuropsychology 4(3):199-230.
Whiting, B.B., and C.P. Edwards
  1988   Children of Different Worlds. Cambridge, Massachusetts: Harvard Uni-
           versity Press.

Whiting, J.W.M., and I.L. Child
   1953   Child Training and Personality: A Cross-Cultural Study. New Haven: Yale University Press.
Will, B., and F. Eclancher
   1984   Early Brain Damage and Early Environment. *In* Early Brain Damage, Vol. 2: Neurobiology and Behavior, edited by S. Finger and C.R. Almli. New York: Academic Press.
Wilson, M.
   1987   Brain Mechanisms in Categorical Perception. *In* Categorical Perception, edited by S. Harnad. New York: Cambridge University Press.
Winick, M.
   1976   Malnutrition and Brain Development. New York: Oxford University Press.
Witelson, S.F., and W. Pallie
   1973   Left Hemisphere Specialization for Language in the Newborn: Neuroanatomical Evidence of Asymmetry. Brain 96:641-647.
Yakovlev, P.I., and A. Lecours
   1967   The Myelogenetic Cycles of Regional Maturation of the Brain. *In* Regional Development of the Brain in Early Life, edited by A. Minkowski. Philadelphia: Davis.
Yonas, A., and C.E. Granrud
   1985   Development of Visual Space Perception in Young Infants. *In* Neonate Cognition: Beyond the Blooming Buzzing Confusion, edited by J. Mehler and R. Fox. Hillsdale, New Jersey: Lawrence Erlbaum.
Zelazo, P.R.
   1979   Reactivity to Perceptual-Cognitive Events: Application for Infant Assessment. *In* Infants at Risk: Assessment of Cognitive Functioning, edited by R. Kearsley and I. Sigel. Hillsdale, New Jersey: Erlbaum.

JACK H. DRIBERG: A HUMANISTIC ANTHROPOLOGIST BEFORE HIS TIME

Nancy J. Schmidt
Indiana University, Bloomington

Abstract: Jack H. Driberg (1888-1946), a British social anthropologist who wrote a classical ethnography on the Lango before receiving formal anthropological training, spent over a dozen years doing fieldwork in Africa. He was both an atypical colonial administrator who was able to understand and convey to others Africans' views and an extraordinary anthropologist for his time and place who raised issues in anthropology which have come to the fore only in recent years, primarily in American humanistic anthropology. This essay reassesses Driberg's contributions to humanistic anthropology focusing on his writing in "non-scientific" genres.

Résumé: Jack H. Driberg (1888-1946) un anthropologiste social britannique qui écrivit sur les Lango, avant même d'avoir reçu un entraînement formel en anthropologie, un essai devenu classique, se livra à des travaux pratiques en Afrique pendant une douzaine d'années. Il était à la fois un administrateur colonial non-typique, capable de comprendre et de communiquer aux autres les vues des Africains, et un anthropologiste extraordinaire — pour son temps et dans sa situation — qui souleva des questions d'anthropologie venues sur l'avant-scène seulement ces dernières années, principalement dans l'anthropologie humaniste américaine. Cet essai réévalue la contribution de Driberg à l'anthropologie humaniste, se concentrant sur ses écrits de genre non-scientifique.

> "The science of society is essentially humanistic." — Driberg 1930b:79

Jack Driberg would probably be an active participant in the current discussions of alternative ethnographic genres to the ethnographic monograph if he were alive in the 1980s. A poet by avocation and sensibility, he wrote a classical ethnography on the Lango before receiving anthropological training, as well as ethnological essays on East African culture, short stories based on his fieldwork, translations of poetry collected in the field, popular books on anthropology and his experiences as a colonial administrator in East Africa,

popular essays, letters to newspapers and journal editors on African culture, and book reviews on a wide variety of topics including music, the ethnography of Melanesia, anthropological theory, linguistics and Africa. Because Driberg felt that he had a mission to show the British public the relevance of anthropology for understanding people in the British Empire, he wrote more "popular" than "professional" anthropology.

Driberg was born in Assam in 1888, the child of a British colonial servant. Before joining the colonial service in 1912, Driberg was educated at the Grange Preparatory School, Crowborough, Lancing College and Hertford College, Oxford, where he studied the classics. Driberg served in the British colonial administration in Uganda, where he lived among the Lango, Lugbara, and Acholi, from 1912 to 1921, when he transferred to Sudan. Before he retired from the colonial service in 1925, he also spent time in Kenya, Ethiopia, Congo (Zaire) and Morocco. Driberg studied anthropology with Malinowski and Seligman at the London School of Economics from 1925 to 1927. Subsequently he lectured in anthropology at the London School of Economics from 1927 to 1929 and taught in the Department of Archaeology and Anthropology at Cambridge University from 1931 to 1942. In 1942 he joined the British Ministry of Information, where he served until his death in 1946.

In his own time Driberg was better known to the British public from his popular writing than to the scholarly community from his anthropological writing. His books were widely reviewed in non-anthropological publications both in Britain and America. British anthropologists acknowledged that he was an exceptional linguist who made a significant contribution to East African ethnology, but felt that he was a more talented popularizer than an original thinker (Evans-Pritchard 1947), largely because he made no contribution to prevalent functionalist theories of the time. As a colonial administrator he was considered unorthodox because of his active participation in East African cultures (Williams 1946), and a romantic figure because of his harshly critical and culturally relativistic views about colonial administration. An assessment of Driberg's career as a colonial administrator is outside the scope of this essay.

Although Driberg was a popular lecturer in anthropology at Cambridge University from 1931 until 1942, and as such helped the anthropology program "flourish" (Evans-Pritchard 1947), no "school" of anthropology developed around him. Anthropologists of his own time, especially his British colleagues, who were concerned with the theoretical development of structural-functionalism, compartmentalized his scientific and popular writing, thereby seriously underrating his anthropological contributions and importance as an innovator and original thinker in what today would be called humanistic anthropology. The humanistic innovations of other anthro-

pologists at the same time, such as Hilda Kuper and Carleton Coon, also were ignored by their anthropological contemporaries.

Although most of Driberg's writing was not deemed worthy of review by anthropologists, general reviewers repeatedly recognized its anthropological significance. For example, an anonymous reviewer in *The Spectator* recognized that *Engato the Lion Cub* included two sections that "reveal the same exhaustive understanding of native life as Mr. Driberg's more heavyweight works" (The Spectator 1933:974), while C.H.W. who reviewed *At Home with the Savage* in *The New Statesman and Nation* found that despite some weaknesses it was valuable in:

> stimulating interest in anthropology as a science capable of serving practical ends, and in taking the blinkers from our eyes so that we may see the uncivilized peoples of the world for what they are — human beings faced with the same fundamental problems of how to solve their biological needs that we are faced with, and solving these problems in their own more or less satisfactory ways. (C.H.W. 1932:135)

Jack Driberg was a born anthropologist whose life and written work were infused by principles of anthropology combined with a unique humanistic sensibility. All of Driberg's writing, professional and popular, fiction and non-fiction, showed that he was a sensitive, thoughtful and keen observer of East African life, who not only had a deep sympathy for Africans, but also respected and loved them. However, he neither romanticized African life nor was sentimental about African culture. Despite his long-term, close contact with African peoples and speaking knowledge of eleven African languages, he was always humble about how well Europeans could know African peoples and cautious about generalizing about African cultures.[1] Driberg had a critical mind which he applied to all aspects of his professional work. He could examine dispassionately the limitations of his own knowledge of Africa, the principles and practice of anthropology and British colonial administration, and books and articles he read and reviewed.

Trained as a classical scholar and knowledgeable about music, Driberg also was a published poet. In his first book, *Poems*, Driberg wrote regularly metered, rhyming verse about love and classical topics, and translated several poems from the classics. His ability to support non-traditional viewpoints was shown in the poem, "The Man of Kerioth" (Driberg 1908:11-16), in which he presented a specious defense to minimize the guilt of Judas "in conformity with the growing modern tendency to 'whitewash' historical characters" (ibid.:11).

By his own admission, Driberg had neither heard of anthropology nor read any anthropological works before he went to Uganda as a colonial administrator in 1912 (Driberg 1932b:1). Yet in his earliest written work he

showed a clear sense of scientific method, a keen eye for observing behaviour, and objectivity and balance in drawing conclusions from his observations, characteristics which were to become more pronounced after his formal training in anthropology under Malinowski from 1925 to 1927. Driberg learned from his field experience the convergence of interests between colonial administrators and anthropologists to which Malinowski later drew attention (Malinowski 1961:8). He was a participant observer to a fuller extent than many anthropologists of his time,[2] which is all the more remarkable because as a colonial administrator political barriers were placed between him and the peoples among whom he lived.

The Lango (Driberg 1923), his classical ethnography on one of the Nilotic peoples of Uganda, is a model of detailed ethnographic description for the time in which it was written. As Robert Thorne Corydon states in the "Foreword," it was not Driberg's duty to collect the data, it was a "labour of love" (Driberg 1923:5). Driberg's stated purpose in writing *The Lango* bears this out:

> The record has been inspired by my affection for a race with whom I have lived and worked for several years, and among whom I have been fortunate enough to form some of my most enduring friendships. Brave, loyal, courteous and hospitable, they have readily accorded me a confidence greater than my deserving, and they will always remain more than a pleasant memory now that the exigencies of service have separated us. In repayment of this obligation this work was in the first place undertaken in order that in these days of rapid change and transition to newer modes of life and thought some memorial might remain of their past traditions and of customs, which may too easily be overwhelmed by the hurrying and ruthless march of an alien civilization. (Driberg 1923:19)

Although Driberg spent six years among the Lango, he felt that for some purposes twenty years' observation was necessary (Driberg 1923:49); he readily admitted that he was unable to collect adequate data on such topics as physical characteristics (ibid.:50), music (ibid.:126) and historical forms of government (ibid.:204); and stated that his account of Lango history "is largely conjectural and open to criticism" (ibid.:25). Such qualifications are typical of all Driberg's professional and popular writing, but not of most ethnographic writing of his time.

Driberg also was careful to present the precise meanings of words such as *ajoka*, witch doctor.[3] He described the *ajoka's* duties in detail and concluded, "The *ajoka* is no more a charlatan than any priest of any religion; he obeys an impulse which he attributes to the deity and utilizes his peculiar gifts to the service of that deity" (Driberg 1923:236); he "is in short, a primitive philosopher, a scientist in embryo" (ibid.:237). Likewise Driberg

referred to the specialist who removed people's incisors as a "professional dentist" (ibid.:51).

In his first field experience Driberg obtained a deep understanding of polygyny and brideprice, topics about which he wrote frequently in the course of his career.

> It is often urged against polygyny and the payment of dowries that it results in the degradation of the women to the position of being mere property. However true this may be elsewhere, it is very far from the truth among the Lango, whose womenfolk are treated with remarkable courtesy and consideration, and though invested by custom with the right of vetoing a husband from contracting a second marriage, would be the first to resent the institution of monogamy. (ibid:67)

Although Driberg differed from many of his contemporaries in his relatively "enlightened" views on polygyny, bridewealth, health, disease, morality, cannibalism and religion, he apparently accepted without question the Hamitic hypothesis that more "advanced" culture traits in eastern Africa were introduced from outside Africa and that precolonial Lango culture change resulted from "waves" of Hamitic migrations.

Although Driberg observed that "In their narration they show keen dramatic insight, distinguishing the characteristics of the animals or persons represented by appropriate gestures and changes of voice" (Driberg 1923:133), his translations of twelve Lango "fables" (ibid.:433-455) gave no indication of narrative features, and though by no means literal translations, were not tellable. The translations of these "fables" are a marked contrast to his skillful translations of Lango and Didinga poems in *Initiation* (Driberg 1932f), published by the Golden Cockerel Press. This book of poetry, produced by a cooperative press well-known for its illustrations and established to make finely produced books available to the public at a reasonable price, was another labour of love. It also was a unique presentation of oral literature for a British social anthropologist of his time, which captured the spirit of its composers and original performance.

In one of his typical scientific qualifications, Driberg stated in a "Note" in *Initiation*:

> A word of explanation for these poems is, perhaps, necessary. I do not care to call them translations, though that word would most accurately describe them. Many of them are translations in the strictest sense. . . . "Spear-Blessing" is a fairly close rendering of a Lango invocation, and the two "Songs of Initiation" might be called translations, but I hesitate to do so, and they are incomplete, because in the one case . . . what I have given is all that I have heard (a very small fragment of the whole). . . . "The Ancient Gods" is incomplete, however, because though I heard every word of the original I am debarred by the fact of initiation from reproducing more than I have given here. . . . Others . . .

are synthetic, composed of snatches heard on different occasions, each accurate in itself and homogeneous in content, but not originally one song. (Driberg 1932f:1)

These poems with illustrations by Roger Gibbings were written in a free verse style markedly different from his own *Poems*. They showed Driberg's poetic sensibility in their rendering and were intended for the public to enjoy, in contrast to the songs and fables in *The Lango* which appeared adjacent to the Lango texts, so that experts could check the translations against the originals. Driberg, however, did not take credit for the "originality" of the poems in *Initiation*:

They are all based on African motifs and, so far as it is possible for any European, I have tried to express only their thoughts and to interpret the motifs in their own way. The imagery and metaphor is entirely African, and I have to thank my Didinga and Lango friends for enabling me to reproduce their sentiments to English readers unfamiliar with their cultures. I stress this point, as it is the fashion to assume that primitive people, and particularly Africans, are deficient in imagination and poetical expression. My experience, and the experience of others who have been on terms of intimacy with Africans, is definitely against such an assumption. (Driberg 1932f:2)

Driberg's poetic facility, as well as his narrative competence were shown in *People of the Small Arrow* (Driberg 1930d), his most widely read and reviewed book. This collection of short stories focused on members of a Didinga clan over several generations. Although Driberg did not write a comprehensive account of Didinga culture, he wrote anthropological essays about their age groups (Driberg 1932d) and divination (Driberg 1933) and included information about them in his popular non-fiction. For example, it is clear that Driberg used the names of real people in at least some of his short stories. "The Tragic Love of Lotingiro and Nachai" was about Lotingiro, a deviant in Didinga society, who questioned the validity of well-established Didinga customs and was ultimately killed for his repeated violation of incest norms. In *The Savage As He Really Is*, Driberg used Lotingiro as an example of there being deviants in all cultures, reviewed the "facts" that are presented in the story, and gave additional information, such as Lotingiro's age, that was not included in the story (Driberg 1929h:9-10).

Even more details about the factual basis of "The Rainmaker" were provided in *At Home with the Savage* (Driberg 1932b:253-255). In this example, it is clear that Driberg greatly simplified an exceedingly complex incident involving minute details of Didinga kinship in his story. Throughout his stories Driberg expressed Didinga viewpoints through the characters. He also wove sensitive descriptions of the natural environment into the stories. These apparently represented Didinga viewpoints too, for in *The Savage As*

He Really Is, Driberg used the Didinga as an example of the artistic and aesthetic appreciation of "savages," citing as an example a Didinga who changed the location of his household so that he could get a better view of the sunset (Driberg 1929h:73).

People of the Small Arrow clearly was based on Driberg's "fieldwork" and had a foundation in "fact." However, the stories were told without any overt scientific descriptions of cultural details, with full attention to action and motivation of the characters. Today the stories in this collection might be labelled "faction." Six of the stories were about intersocietal warfare between the Didinga and Topotha, who initiated the warfare but were defeated by the Didinga and their Acholi allies. The other stories dealt with commonplace events in Didinga culture such as birth, death, love, marriage, hunting, witchcraft, rituals and music. "Kaiywe," the concluding story, was an allegorical discussion among the mountain peaks in the Didinga chain that reviewed the succession of peoples, African and European, who had lived in and passed through the mountains. The Didinga were clearly the mountain's favourite people, and perhaps were Driberg's as well, since he wrote about them with more sustained empathy than about any of the other African peoples among whom he lived.

Reviewers were enthusiastic about *People of the Small Arrow* primarily for the skillful way that Driberg provided insight into Didinga life. William Plomer considered it a "saga in miniature" and more than a "film" of "savage life," "it is invested with the inward light of sympathetic understanding; the characters are thought of as creatures of flesh and blood" (Plomer 1930:709), while an anonymous reviewer in *The Nation* found the stories "intimate, vivid sketches" of life written without condescension and "free from the pedagogue's responsibility to inclose the greatest possible amount of information" (The Nation 1930:132).

Three reviewers considered *People of the Small Arrow* far more valuable than professional anthropology. Alain Locke found in it:

> more of the true flavor of the primitive mind than from a half dozen typical anthropological treatises. We learn, with great interest and considerable relief, how complex and sophisticated the African mind really is, and how an outwardly simple life can be inwardly complicated with irony, guile, romance and tragedy. Perhaps gradually we are approaching a completely new view of primitive mentality. (Locke 1930:406)

An anonymous reviewer in the *New Statesman* had a similar opinion, "As a study in the psychology of the African negro this interesting little book will have far more value for the general reader than a whole shelf-full of learned works by anthropologists" (New Statesman 1930:644), and went on to say "the verisimilitude is wonderful; as we put down the book we are left

with a perfectly clear impression of having ourselves lived for a brief period among the Didinga''(ibid.:646).

Max Lerner compared the life of the Didinga as presented by Driberg with that of other authors and noted that it was "far from the unrelieved superstition and degradation which Lévy-Bruhl and his followers attribute to savage life" (Lerner 1930:M10). Lerner questioned whether *People of the Small Arrow* was a novel, but found it very valuable nonetheless.

> To achieve a portrait of a community in action, utterly free of dullness and ped-
> antry, managing somehow to convey social characterization through the impli-
> cations of the narrative and to do it without running headlong into "popular-
> ization," is a Napoleonic feat. If I had the task of inducting people with normal
> taste and interests into the study of anthropology I should choose this book
> before any of the treatises. It is human and creative where they are not. The
> writing is superb, possessing dignity, economy, movement. I know of nothing
> in anthropological literature to equal it. (Lerner 1930:M10)

In marked contrast to the enthusiasm of the non-anthropological reviewers, T.J.A. Yates in a review in *Africa* tempered his appreciation of the stories as "very well worth while" and remarked on Driberg's great empathy for the Didinga which enabled the reader to identify with the characters thereby introducing "that emotional factor which does so much more for understanding than cold reason is capable of doing" (Yates 1931:136). He concluded: "Although there is much new ethnological material in this book, the fictional form of its presentation, so useful in winning the general reader's interest, militates against its use by the anthropologist''(ibid.:136).

Engato the Lion Cub (Driberg 1934b) was not a "fairy-tale," but Dri-
berg was "almost tempted to start with the traditional Once-upon-a-
time''(ibid.:13). It was a true story about a lion cub that lived with Driberg for two years, dedicated to a child and probably written for adults as well as children. In the context of an engaging story about a lion cub's adventures, it incorporated ethnographic information about the Lango and Bakenyi and Driberg's fieldwork among them which was not included in his writing for anthropologists.

Driberg provided brief ethnographic information about the Bakenyi, who lived on "floating homes" on Lake Kioga where he visited them annu-
ally, and a detailed description of his initiation into a Lango age group (Dri-
berg 1934b:56-62, 100-115). He also revealed his feelings about the significance of his initiation:

> When my Lango friends suggested that it would be a good thing if I were ini-
> tiated at that year's *Eworon* (the festival of initiation, which can be translated
> almost literally as "let us now praise famous men"), I took it as the highest
> compliment that they could pay me, though we might sometimes have to take

different sides officially, they nevertheless considered me as their friend and not entirely alien from their point of view. (Driberg 1934b:104)

Nowhere in his writing for anthropologists did he reveal in as much detail the kinds of personalized field experiences as in *Engato the Lion Cub*, where he commented on specific informants (Driberg 1934b:91, 128), told how the Lango staged events to take advantage of him (ibid.:25), and related how he took advantage of the Langos' amenability to flattery (ibid.:29). He also described how the Lango composed songs about one of Engato's unsuccessful encounters with a warthog and about "the not too agreeable details" of his own first hunt (ibid.:45).

As in his other writing, Driberg showed his respect for Lango hunting abilities and honesty: "Africans whose lives may depend on the accuracy of their observations are, as a rule, trustworthy informants, and their statements are not to be lightly thrown aside as incredible (Driberg 1934b:120-121). He also briefly described his final departure from the Lango "with infinite regret, knowing that in all probability I should only return to them as a wayfarer" (ibid.:140).

Driberg also included information on fieldwork in his popular introductions to anthropology, *The Savage As He Really Is* (Driberg 1929h) and *At Home With The Savage* (Driberg 1932b), but the context was that of popular science rather than a story as in *Engato the Lion Cub*. These introductions to anthropology reflected Driberg's field experience as a colonial administrator in their emphasis on the value of applied anthropology and his cultural relativism in his non-pejorative use of the term "savage" and argument that the term "primitive" was meaningless for living people.

Driberg clearly recognized that fieldwork was both art and science. He observed that the techniques of scientific anthropology "do little more than supplement the faculties of discreet observation, without which we have no right to be in the field at all" (Driberg 1932b:34). He further acknowledged that "good manners — according to native standards — sympathy, a readiness to sink one's personality and to be merged with the communal life of the village, these and the gift of tongues will be our chief assets" (ibid.:33) in fieldwork, but observed that "we still have to retain the amateur's enthusiasm for his subject and to keep the personal element in the foreground. The cold, abstract, unemotional scientist should stay at home" (ibid.:34).

Driberg clearly recognized the limitations of fieldwork: "a mere man cannot possibly come back with a complete account of a tribe and its activities and beliefs" (Driberg 1932b:31). He admitted having made mistakes in the field which made him aware of the need for anthropological facts: "To try to govern without such knowledge is sheer arrogance, and it is the function of anthropology to provide this knowledge"(ibid.:5). He reiterated the

practical value of anthropological knowledge in statements like the following:

> when we know what native institutions mean, and have studied their laws and customs with the sympathy which they deserve, then our administration of them will no longer be embarrassed by the costly wars and uprisings for which our ignorance has in the past been more responsible than anything else. (Driberg 1929h:76)

Driberg observed, "The savage as he really is is not an academic problem but a very concrete and urgent reality" (Driberg 1929h:76).

Although Driberg never used the term "cultural relativism," he made numerous statements in his popular writing that demonstrated his relativism.[4] For example, he pointed out that if customs are studied in context they may remain foreign to us, but we cannot deny their rational basis (Driberg 1929h:2), and went on to say:

> If we do not believe in the logic of the savage and in the identity of his processes of thought with our own, then we should be proved illogical ourselves in attempting to develop along logical lines peoples of an alien mentality and in attempting to transmit our civilisation to people incapable of assimilating it. (Driberg 1929h:2)

Driberg's popular writing on colonial administration also demonstrated his cultural relativism and the high value he placed on anthropology, as well as his uniqueness as a colonial administrator. As William Plomer observed, Driberg was a

> rare type of colonial administrator, a man of passion, who is richer in imagination, more a humanist, perhaps with a touch of the poetic or scientific, or both, who is apt sometimes to find himself at variance with those who believe in gradually walloping the erring Bantu a step nearer to a visionary future of churches, banks and hospitals (Driberg 1939:709).

In *The East African Problem* (Driberg 1930b) Driberg repeatedly stated the need for anthropology in colonial administration:

> We know little or nothing about our wards, and any steps which we take to ensure their protection or development are taken blindly and are haphazard. We have no formulated policy, because without this knowledge we are not in a position to formulate one. We blunder ahead with the best intentions in the world, but deny to ourselves — and incidentally to our wards — just those guiding principles which anthropology alone can give us. (Driberg 1930b:17)

However, Driberg never formalized his views on the relationship between anthropology and colonial administration in a scholarly format with appro-

priate theoretical underpinning as did Malinowski in *The Dynamics of Culture Change* (Malinowski 1961).

Driberg criticized the prevailing view of the times that the "difficult task of administering primitive peoples is supposed to be a divinely inspired gift, the secret of which is open to any European with a university degree" (Driberg 1930b:77), and pointed out that colonial administrators were as much in need of an appropriate education as were the natives. It is clear from Driberg's writing that he thought that more than "book" knowledge was essential for successful colonial administration.

Driberg's views on colonial education and administration reveal his cultural relativism. He pointed out that African development must rest on African "civilisation" not European civilization (Driberg 1930b:55), and decried the failure to recognize and use African "systems of education" (ibid.:76) and the emphasis on European education. "Unfortunately the education they have been offered has been moulded almost exclusively along European lines. What is good enough for us is often bad enough for them (ibid.:75). He felt that anthropological surveys "would at once enable the government to formulate a 'native policy' and a rational policy of education" (ibid.:19).

Driberg's cultural relativism was evident in his feeling that African cultures should not be abolished "root and branch," but that the "best" in them should be preserved (Driberg 1930b:63-64), and in his numerous harsh criticisms of colonial administrative practice. For example, he wrote that Europeans needed to "rid our hands of intellectual snobbery and to realise that our own needs (and not everyone would concede even that), are not necessarily appropriate for all cultures and environments" (ibid.:65).

> If we are obsessed with the belief that our political institutions are the only ones which can save the African from extinction, then the sooner we abandon our trusteeship the better. Half our troubles have been due to our inadaptability, and more than half our wars to a proselytizing belief that what is good enough for us must be good enough for savages (ibid.:67).

Driberg tried to formally combine his interest in academic anthropology with placing anthropology in the service of the public by editing a series of comprehensive surveys of African cultures for administrators, missionaries, economists and educationists. "It is the hope of the editors that applied anthropology no less than purely academic science will find in this series the groundwork upon which it may build for the future" (Driberg 1930c:v). However, only two books were published in the series; neither was written with Driberg's skill for communicating anthropology to a generally educated public.[5]

Driberg's humanism was evident in his professional essays on law (Driberg 1928), religion (Driberg 1919c), and the status of women (Driberg

1932j), as well as in the series of letters about bridewealth that appeared in *Man* (Driberg 1929b, 1930a, 1931a, 1932c). However, his professional writing did not afford him the sustained opportunity for humanistic expression that he found in popular writing. Driberg showed his grasp of anthropological theory in his professional essays on Lango kinship (Driberg 1932h), Galla colonization (Driberg 1931b), and economic development in East Africa (Driberg 1932e), as well as in such book reviews as those of Briffault's *The Mothers* (Driberg 1927e) and Davie's *The Evolution of War* (Driberg 1930h). He sometimes explicitly argued against prevailing theories (Driberg 1929h, 1931b), but more often simply stated his own position without explicit reference to theory, as illustrated in some of the previous quotations from his work. Driberg chose not to emphasize theory in his writing, since it was anthropology in practice, especially applied anthropology in the British Empire, which was of primary importance to him.

Anthropologists of his time were so concerned with equating innovation with theoretical advances that they failed to acknowledge Driberg's contribution to fieldwork through his frank commentary on the realities and limitations of fieldwork which departed substantially from the prevailing *Notes and Queries* approach (Royal Anthropological Institute 1929). Likewise, they ignored his contribution to cultural relativism and cross-cultural understanding through precise, limited comparisons and contextual descriptions that conveyed far better than other anthropologists of his time how non-Europeans thought.

By ignoring Driberg's popular writing in a variety of genres, anthropologists both of his time and the present have failed to recognize Driberg's innovations in the translation of oral literature texts and in the writing of what today would be called "passionate ethnography." By ignoring Driberg's fiction, anthropologists have failed to recognize his contribution to the development of the genre that one reviewer of his time called "fictionalized anthropology" (New York Times 1930:2) and that we today call ethnographic fiction.

Jack Driberg, a humanist trained in the classical tradition of British social anthropology, was an anomaly in his own time and an important unacknowledged predecessor of humanistic anthropology as it is practised in the 1980s. His books merit attention by contemporary anthropologists for the issues they raise about the practice of anthropology in the early 20th century, and for the models they provide of alternative literary genres, derived from anthropological fieldwork, to the scientific ethnographic monograph. The public response to Driberg's writing in his own time foreshadowed the critique of ethnographic writing which has become prevalent, especially in American cultural anthropology in the 1980s, and served as a reminder of the need for a humanistic framework for the description of culture as lived reality.

Notes

1. He frequently criticized other writers for overgeneralizing and usually refused to generalize broadly himself. However, some reviewers felt that his view of "primitive" man was based solely on African cultures and thus was overgeneralized (C.H.W. 1932, Richards 1932).
2. He was highly critical of armchair anthropologists (1932b), but spent more time in the field than many other fieldworkers. His linguistic facility enabled him to be less dependent on interpreters than many anthropologists of the time.
3. In his book reviews and letters to editors he was highly critical of those who used anthropological and native terms imprecisely (1929d, 1929e, 1932i, 1932k, 1936).
4. His relativism is unusual not only for an anthropologist, but especially so for a colonial administrator. Driberg was able to be both a cultural relativist and a loyal British government employee. At the time of his death he was again working for the government, in the Ministry of Information, assigned to the Near East.
5. These books were Isaac Schapera, *The Khoisan Peoples of South Africa* (1930) and C.G. and Brenda Z. Seligman, *Pagan Tribes of the Nilotic Sudan* (1932).

References Cited

Brooks, Walter R.
  1930   Behind the Blurbs. Outlook and Independent 154(11):427.
Buell, Ellen Lew
  1934   The Engaging Escapades of an African Lion. New York Times Book Review, July 8:6.
C.H.W.
  1932   The Approach to the Savage. New Statesman and Nation, NS 4, 75:135.
Driberg, J.H.
  1908   Poems. London: Frank H. Moreland.
  1919a   Husbandry in the Congo. Man 19(13):64.
  1919b   Note on Hairdressing Among the Lango. Man 19(38):73-75.
  1919c   Rain-making Among the Lango. Journal of the Royal Anthropological Institute 49:52-73.
  1921   The Lango District, Uganda Protectorate. Geographical Journal 58:119-133.
  1922   A Preliminary Account of the Didinga. Sudan Notes and Records 5:208-222.
  1923   The Lango. London: T. Fischer Unwin.
  1927a   The Game of Choro of Pereauni. Man 27(114):167-172; 127(127):186-189.
  1927b   Notes on Dreams Among the Lango and the Didinga of the South-Eastern Sudan. Man 27(94):141-143.
  1927c   Review of Charles M. Diserens, The Influence of Music on Behaviour. Man 27(142):211-212.
  1927d   Review of J.A. Massam, The Cliff Dwellers of Kenya. Man 27(83):134-135.
  1927e   Review of Robert Briffault, The Mothers. Man 27(120):181-182.
  1928   Primitive Law in Eastern Africa. Africa 1:63-72.
  1929a   Big Game in Africa. The Times (London), September 27:10.
  1929b   Brideprice. Man 29(142):180.

1929c   Fighting Wristlets. Man 29(172):213.

1929d   Inheritance Fees. Man 29(64):87-90.

1929e   Review of Dan McKenzie, The Infancy of Medicine. Man 29(22):37-39.

1929f   Review of Margaret Mead, Coming of Age in Samoa. Man 29(140): 179.

1929g   Review of S.G.C. Knibbs, The Savage Solomons as They Were and Are. Man 29(166):209-210.

1929h   The Savage as He Really Is. London: George Routledge and Sons.

1930a   Brideprice. Man 30(60):73-75.

1930b   The East African Problem. London: Williams and Norgate.

1930c   Introductory Note. *In* The Khoisan Peoples of South Africa, Isaac Shapera, pp. v-vi. London: Routledge and Sons.

1930e   Review of B. Schrieke, The Effect of Western Influence on Native Civilizations in the Malay Archipelago. Man 30(106):130-131.

1930f   Review of Elizabeth Anne Weber, The Duk-Duks. Man 30(105):130.

1930g   Review of L. Homberger, Les Prefixes Nominaux dans les Parleurs Peuls, Haoussa et Bantous. Man 30(132):164

1930h   Review of Maurice R. Davie, The Evolution of War. Man 30(115):143-144.

1931a   Brideprice. Man 31(234):236 and 31(278):284.

1931b   Gala Colonists and the Lake Regions of Africa. Ethnologische Studien 1(3):193-213.

1931c   Yakan. Journal of the Royal Anthropological Institute 61:413-420.

1932a   African Systems of Education. Man 32(144):122-123.

1932b   At Home with the Savage. London: William Morrow.

1932c   Brideprice. Man 32(155):128.

1932d   An East African Intertribal Fraternity. Asia (New York) 32:244-245, 265-266.

1932e   Economic Stages of Development in Africa. Man 32(200):166-167.

1932f   Initiation. Waltham St. Lawrence: Golden Cockerel Press.

1932g   Lokuto Dialects. American Anthropologist 34(4):601-609.

1932h   Some Aspects of Lango Kinship. Sociologus 8:44-61.

1932i   State Marriage in Africa. Man 32(111):85-87.

1932j   The Status of Women Among the Nilotics and Nilo-Hamitics. Africa 5(4):404-421.

1932k   Witchcraft in Africa. The Times (London), May 6:10.

1933   Divination by Pebbles. Man 33(3):7-9.

1934a   The African Conception of Law. Journal of Comparative Legislation and International Law 16:230-246.

1934b   Engato the Lion Cub. New York: Dutton.

1934c   Hamitic Culture and Its Distribution. *In* Compte-rendu de la Première Session, Congrès International des Sciences Anthropologiques et Ethnologiques, pp. 282-283. London: Royal Anthropological Institute.

1935   The "Best Friend" Among the Didinga. Man 35(110):101-102.

1935   Germany and South Africa. The Times (London), April 30:10.

1939   A Note on the Classification of Half-Hamites in East Africa. Man 39(19):20-21.

1940   The Meaning of the Cowrie. Man 40(208):175-176.

Evans-Pritchard, E.E.
  1947   Jack Herbert Driberg 1888-1946. Man 47(4):11-13.
Howell, P.P.
  1947   Jack Herbert Driberg. Sudan Notes and Records 28:197-198.
Langdon-Davies, John
  1930   Review of J.H. Driberg, People of the Small Arrow. New York Herald
          Tribune Books, March 2:5.
Lerner, Max
  1930   Small Arrow Tribal Story Has Serenity. New York Evening Post, March
          22:M10.
Levy, Melville P.
  1930   Africa. The New Republic, June 18:132.
Locke, Alain
  1930   Savages Are Not Simple. Survey 64(9):406.
Lowie, Robert H.
  1930   Review of J.H. Driberg, The Savage As He Really Is. American Anthro-
          pologist 32:557.
Malinowski, Bronislaw
  1961   The Dynamics of Culture Change [1945]. New Haven: Yale University
          Press.
Nairobi Correspondent
  1923   Troublesome Turkana. The Times (London), January 12:17.
Nation
  1930   Review of J.H. Driberg, People of the Small Arrow. The Nation
          131(3395):132.
Nature
  1934   Lions and Their Cubs. Nature 134(3394):755-756.
New Statesman
  1930   The Heart of Africa. New Statesman 34(878):644-646.
New York Times
  1930   An East African Tribe in "Fictionalized Anthropology." New York
          Times Book Review, March 30:2.
  1932   The Customs of Natural Man. New York Times Book Review, December
          4:11, 24.
Plomer, William
  1930   Aspects of Africa. Nation and Athenaeum 46 (21):709.
Richards, A.I.
  1932   Review of J.H. Driberg. At Home with the Savage. Africa 5:523-525.
Royal Anthropological Institute of Great Britain and Ireland
  1929   Notes and Queries on Anthropology. London: Routledge and Kegan
          Paul
Seligman, C.G., and Brenda Z. Seligman
  1932   Pagan Tribes of the Nilotic Sudan. London: Routledge and Kegan Paul.
Spectator
  1932   The Modern Anthropologist. The Spectator 148(5421):733-734.
  1933   Review of Jack Driberg, Engato the Lion Cub. The Spectator
          151(5505):974.

Times, The
    1932   Primitive Folk. Anthropology for Administrators. The Times (London),
            June 3:21.
    1946   Mr. Jack Driberg. The Natives of East Africa. The Times (London), Feb-
            ruary 7:7.
Times Literary Supplement
    1930   Prehistory As Fiction. Times Literary Supplement 24(1469):262.
    1932   Anthropology. Times Literary Supplement 31(1582):391.
Williams, F. Likyn
    1946   J.H. Driberg. Uganda Journal 10:40-41.
Yates, T.J.A.
    1931   Review of J.H. Driberg, People of the Small Arrow. Africa 4:135-136.

A STRUCTURALIST'S VIEW OF
AN INDIAN CREATION MYTH

Ron Messer
Victoria, B.C.

Abstract: Within the mythology of the North American Indians a certain supernatural being is frequently presented as the synthesis of two apparently divergent traits of character. Here, the trickster-transformer-culture hero, or trickster-hero, as he is sometimes called (Ricketts 1966:327), is at one and the same time a hero and a deceiver. The trickster-hero is both courageous and cunning, ingenious and impudent. This apparent contradiction in his personality, which appears so blatantly obvious to the student of native folklore and mythology, is taken as a matter of course by the native American Indian. It will also provide the focal point for the investigation to be undertaken.

Résumé: Dans la mythologie des Indiens d'Amérique du Nord, un certain être surnaturel est fréquemment présenté comme la synthèse de deux traits de caractère divergents sinon contradictoires. Selon ce thème, le héros culturel-imposteur-magicien, ou héros-imposteur comme on l'appelle parfois (Ricketts 1966:327), est tout à la fois un héros et un imposteur. Ce héros-imposteur est en même temps courageux et rusé, sincère et plein d'effronterie. Cette apparente contradiction dans sa personnalité, qui semble si évidente à celui engagé dans l'étude du folklore et de la mythologie autochtones, est considérée comme un fait allant de soi par les Amérindiens. Et elle constituera le sujet central de la recherche entreprise ici.

Structuralism has been with us for over three decades, and though it may no longer be in vogue, its usefulness as a methodological tool for interpreting a variety of cultural expressions (including myth) still exists. Structuralism has been criticized for being overly reductionistic — a critique levelled at its underlying theory. This critique, however, stands apart from the powerful hermeneutic which structuralism offers as a methodology. In ways which recall the early reception accorded to psychoanalytic theory, structuralism has moved from being a revolutionary paradigm for understanding social/psychological phenomena to being an anachronism in social thinking. Reminiscent too of the history of psychoanalysis is the fact that, although the underlying theory is open to question, the practicability of the method is not. This paper will not defend structuralist theory but rather apply its methodology in

providing insights into the ubiquitous mythic conundrum of the trickster-hero.

Claude Lévi-Strauss has offered a novel approach to the understanding of the combination of these apparently ambiguous traits of character.[1] By viewing myth as composed of a diachronic dimension which is undergirded by an ahistorical synchronic plane, structuralism does away with arguments which focus on temporality, examining the ambiguous nature of mythical figures who combine heroic and deceptive traits as a manifestation of an invariant structuring principle independent of time (Lévi-Strauss 1963:211-212). By analyzing myth as a manifestation of the operation of a single universal common denominator (i.e., the human mind) Lévi-Strauss' structural anthropology examines the trickster-hero relationship as a logical manifestation of an unconscious structuring activity whose purpose it is to come to terms with a real life conflict (Lévi-Strauss 1963:229). Structuralism as a methodological device has demonstrated that seemingly inexplicable elements in myth, when viewed in terms of an underlying structure, have meaning. The North American Indian trickster is a case in point. In his writings Lévi-Strauss has shown that figures such as tricksters function as mediators by bringing opposites into relation (Lévi-Strauss 1963:224). What is interesting about this proposition is that in many instances these supernatural beings act not only as tricksters, but as heroes as well. To arrive at a better understanding of this paradoxical relationship this essay will examine a particular instance of the combination of these qualities.

The mythology of the Ojibwa Indians of the Great Lakes deals at length with the adventures of a certain supernatural being frequently referred to as Nanabozho. Through analysis of the mythological data relating to this figure, Lévi-Strauss' method of myth interpretation will be employed to elucidate a particular part of the native tradition. It will thereby address the twofold question: What does a structural analysis tell us about the role of the trickster-hero in Ojibwa folklore, and further, why does he combine these two apparently disparate traits of character?

The Theory

According to Lévi-Strauss, through the senses man apprehends the world around him and transforms his perceptions into coded messages processed via the agency of the mind. These messages function in terms of binary oppositions, which, through mediation and correlation with other relations of opposition, present a logical structure manifest — although not always apparent — in social life. Lévi-Strauss refers to the procedure by which these relations of opposition are deduced and elucidated as structural anthropology, or simply structuralism.

Crucial to any understanding of Lévi-Strauss is his conceptualization of

the mind, which is the unconscious generator of all symbolic activity. Because the mind operates in a logical fashion, symbolic formations will be structured according to its dictates, leading Lévi-Strauss to posit "an internal logic which directs the unconscious workings of the human mind even in those of its creations which have long been considered the most arbitrary" (Lévi-Strauss 1969a:220). Entailed in this conceptualization is both a conscious and an unconscious sphere. Consciously the mind apprehends phenomenal reality via the senses, while unconsciously it acts as the structuring principle for these perceptions.

The structures produced by the mind are manifest in various forms, such as kinship systems, myths and totemic classifications. It is this structuring mental activity which "unifies form and content, and therefore contributes to the emerging of an ordered social interaction" (Rossi 1974:98). Because this order is structured, posits Lévi-Strauss, it can be examined and understood by social science. Thus, between mind and reality there is a reciprocal exchange where reality provides mind with the raw material upon which it operates (ibid.:99).

Lévi-Strauss' quest, simply stated, is for human universals, where verbal "categories provide the mechanism through which [formal] universal structural characteristics of the human brain are transformed into universal structural characteristics of human culture" (Leach 1970:38). It is through these categories that man communicates not only overtly, but covertly as well, revealing a "deep" level at which messages are transmitted, socially manifested and structurally articulated. This formulation provides the basis for Lévi-Strauss' understanding of totemism, kinship and, perhaps most importantly, myth.

Myth, like totemic systems of classification and kinship is a form of communication which is encompassed by the structuralist's paradigm, although it is quite different and structurally much more complex than either of the latter, for in myth the mind is left

> to commune with itself and no longer has to come to terms with objects, it is in a sense reduced to imitating itself as an object; and since the laws governing its operations are not fundamentally different from those it exhibits in other functions, it shows itself to be of the nature of a thing among things. (Lévi-Strauss 1966:10)

The purpose of myth, Lévi-Strauss notes, is to address itself to the logical inconsistencies within nature and society, making statements about *mores* and values, and further enter into a discussion — at a meta-linguistic level — of the unresolvable dilemmas of human existence, such as life and death and man's place in nature (Campbell 1974:22).

The Method

Two trends are evident in Lévi-Strauss' writings on the structural study of myth. The first of these delineates a methodology for the derivation of the myth's basic units, along with their permutations, transformations and mediation within a corpus selected for study. The second, more haphazard procedure selects material, seemingly at random, from culturally diverse and geographically remote areas.[2] These two procedures, it should be noted, are not antithetical, and certainly the latter is justified within the structuralist's frame of reference. However, for the purposes of articulating how a myth should be analyzed, Lévi-Strauss' initial statement (and in my opinion his most lucid) provides the clearest methodological guidelines for the purposes of exposition. This is contained in his 1955 essay "The Structural Study of Myth" (Lévi-Strauss 1963:206-231). This is not to say that Lévi-Strauss' later formulations (as in *The Raw and the Cooked*) will not be utilized in the application of his theoretical principles to the mythology, but rather that his initial statement provides a convenient starting point for a description of his rules of procedure. As will be noted further on, concepts such as codes and messages (for example) are important in the exposition of the myth's structure, and will be utilized in the analysis.

Given the fact that studies of myth have, for the most part, been inconclusive, Lévi-Strauss ventures that further research should be directed towards unearthing some universal common denominator (Lévi-Strauss 1963:207). This leads him to postulate that myth, insofar as it resembles totemic systems of classification and kin designations, is a form of communication which is comprehensible not at the surface level, but at the level of an underlying structure. The question becomes, then, how is this structure to be apprehended? Conveniently, as Lévi-Strauss notes, myth *is* language and therefore, to a certain extent, governed by its rules — but not entirely (ibid.:210).

Though Lévi-Strauss' structural anthropology borrows extensively from structural linguistics, he is careful to point out that language in myth exhibits *"specific* properties" [emphasis mine] (Lévi-Strauss 1963:210). Following de Saussure, Lévi-Strauss notes that language is made up of two components: *langue* — the structural properties of a language — and *parole* — the statistical frequency with which these properties occur. Myth, in this schema, is a composite of the two, and yet distinct; it is "an absolute entity on a third level" (ibid.:209-210).

Because of this, the properties of myth exhibit "more complex features than those which are to be found in any other kind of linguistic expression" (Lévi-Strauss 1963:210). Allowing for this, two hypotheses are generated, namely: (1) myth is made up of constituent units; (2) even though they are like the constituent units of language (phonemes, morphemes, sememes), the

units which make up the language of myth are of a higher and more complex order. Lévi-Strauss refers to these as "gross constituent units" or "mythemes." Based on the linguistic analogy with the phoneme, the mytheme represents the smallest significant unit of contrast within the myth.

The derivation of mythemes takes place at the sentence level. Here, each myth is analyzed individually with a view towards breaking its story line into a series of short, concise statements which are methodically transcribed onto index cards, numbered in sequence, corresponding to the unfolding of the story. This, in Lévi-Strauss' terms, is the diachronic level, and should show that a certain function is "at a given time linked to a given subject. Or, to put it otherwise, each gross constituent unit will consist of a relation" (Lévi-Strauss 1963:211).

Yet, because of the non-reversible nature of time in the diachronic dimension, a synchronic plane, or atemporal dimension, is necessary. On the synchronic level time stands still, as it were, becoming altogether ahistorical. Yet, what gives myth an operational value is that the specific pattern described is timeless; "it explains the present and the past as well as the future" (Lévi-Strauss 1963:209). Thus both the diachronic and synchronic dimensions must be considered when analyzing a particular myth or set of myths (ibid.:211). Accordingly, the "true constituent units of a myth are not the isolated relations but bundles of such relations, and it is only as bundles that these relations can be put to use and combined so as to produce a meaning" (ibid.). Thus, the relationships among the mythemes, or "bundles of relations" lead us to the underlying structure, and hence the meaning of the myth.

Lévi-Strauss notes that myths are only imperfectly transmitted in individual accounts, often leaving their reliability in doubt. Yet the structuralist's model does away with this problem of searching for the "true" or original version by subsuming it within its theoretical framework, where a myth consists of "all its variants." Or, as Leach puts it:

> Lévi-Strauss' postulate is that a corpus of mythology constitutes an orchestra score. The collectivity of the senior members of the society, through its religious institutions, is unconsciously transmitting to the junior members a basic message which is manifest in the score as a whole rather than any particular myth. (Leach 1970:60)

Following this line of argument, to discover the structure of the myth Lévi-Strauss' method requires us to lay out our index cards in a two-dimensional gridwork, with the horizontal plane corresponding to the diachronic level of the myth, and the vertical, to the synchronic. Now the myth can be viewed in two dimensions, and if the other versions are added to the corpus, allowing us a more comprehensive view, a third dimension is

added whereby the accumulated mythemes can be read diachronically, synchronically, and from front to back (Lévi-Strauss 1963:225). Then, by examining the relations between binary pairs of opposites among the mythemes, the grammar, or structure of the myth is made apparent. This structure will be coded, i.e., it will refer to various spheres of social life, such as the economy, political order, kinship, etc., and articulate, through relations of oppositions, the myth's central contradictions (Prattis 1978:10).

The oppositions within myths and their relations, function dialectically in this schema, and are mediated within each code by a third term which possesses characteristics of both contradictories and acts so as to reconcile their differences. Failing to do so, it, too, becomes one of a pair of opposites which in turn must be mediated. Thus, a series of opposites, each seeking mediation, is generated — Lévi-Strauss refers to these formations as "triads." In this way the myth structures itself, growing "spiral-wise until the intellectual impulse which has produced it is exhausted. Its growth is a continuous process, whereas its structure remains discontinuous" (Lévi-Strauss 1963:229). The purpose of myth, for Lévi-Strauss, is to provide a logical model capable of overcoming contradictions.

It is important to note that the codes within myth are interchangeable and provide the vehicle for transmitting the underlying structure. It is in fact the interchangeability of the codes which allows a synchronic dimension to emerge during the analysis.

Briefly, then, a structural analysis illustrates an underlying structure within myth through which the various codes and their transformations and permutations transmit messages addressing contradictions. The presence of mediators signals that the contradiction being addressed has been defined — in the form of opposing relations — and a resolution sought. Failure to solve the paradox causes the message being transmitted to switch over onto another code and level, and again seek resolution through mediation (Prattis 1978:10). The mediators which will be of particular significance to this analysis are those of the trickster and his logical counterpart the hero.

For Lévi-Strauss the trickster acts as a mediator in myth because "his mediating function occupies a position halfway between two polar terms [therefore] he must remain something of that duality — namely an ambiguous and equivocal character" (Lévi-Strauss 1963:226).

Notably, though, says Lévi-Strauss, the trickster is not the only mediator in myth. In the Americas, also included are the twins, who are the weakest of the lot, the messiah, who unites opposites and, as mentioned, the trickster, in whom opposites are held juxtaposed. The twins "bring opposites into association but at the same time leave them individually distinct;" thus their mediating function is a weak one, and, for the most part, they fail to overcome the paradox which the myth seeks to resolve (Lévi-Strauss 1976:166). The trick-

ster, by juxtaposing the opposites, attempts to resolve them but also fails. By bringing the opposites into union, the messiah, it would seem, would resolve the contradictions in the myth. However, Lévi-Strauss does not say this, even though by implication it seems to be a conclusion which can be drawn from the analysis; a conclusion which, I might add, will be potentially significant later on.

The function of mediator is not solely to point to a logical contradiction, but also, in some cases, to exhaust ''all the possible solutions to the problem of bridging the gap between two and one'' (Lévi-Strauss 1963:226). In this way his appearance signals that a resolution is being sought within the domain of a primary code and, resultant upon the success of the mediation — as signalled by the presence of twins, trickster, or messiah — a new code may or may not be entered into. Thus the mediator also defines the nature of subsequent codes in which mediation is sought (ibid.:226-227).

Within the literature, Nanabozho has been viewed as a trickster, culture hero, hare, giant, devil, the source of life and messiah. This is because of the fact that most researchers — as previously discussed — have chosen to focus on one or the other aspect of his personality. Broadly defined, therefore, his mediating role in myth may be characterized as multifunctional, although, as will be pointed out, the myth addresses itself to a central contradiction. (This hypothesis is explored at length in the following section.)

Once having established the diachronic level of the myth — as presented in de Jong's account, which is to follow — by delineating the mythemes, i.e., the units of contrast within the myth (the opposites), the synchronic dimension, or underlying structure is revealed through certain codes: sexual, genealogical, cosmological, economic, geographical and zoological. Moreover, for the entire sequence of the myth, three periods are discernible.

Notably, the logic underlying the myth is present not only within each code, but within the myth as a whole as well. This is expressed in the relationship between the three periods, each of which articulates the myth's central contradiction. By repeating this contradiction throughout the three periods, the myth's ''slated structure'' is revealed. However, Lévi-Strauss notes that ''the slates are not absolutely identical. And since the purpose of myth is to provide a logical model capable of overcoming a contradiction . . . a theoretically infinite number of slates will be generated, each one slightly different from the others'' (Levi-Strauss 1963:229). As will be elaborated more fully further on, the repetition of the myth's central message, as given by the various slates presented, is developed throughout the three periods in a progressive fashion, so that by the myth's conclusion it has been effectively transmitted. In the analysis which follows, three such slates are examined, which when viewed in relation to one another, reveal an underlying logical structure.

The Myth

One well-known series of tales relating Nanabozho's adventures can be divided into three parts: (1) Nanabozho's birth and early adventures, (2) the "Jonah" incident and the battle with an enemy across the waters, and (3) the death of Wolf and the flooding and re-creation of the world. This tripartite division is evident in many of the sources which have been collected (Messer 1983).

These episodes, commonly told as a unit, have been collected on numerous occasions, either in whole or in part. However, only one of these accounts will be utilized in the analysis which follows. Certainly, Lévi-Strauss acknowledges that all versions of a myth are submissible to analysis, but because of the rigour involved in such an exercise (which Lévi-Strauss himself admits is problematic) for pragmatic reasons this paper will restrict itself to a single version. Thus the version of the myth collected by J.P.B. de Josselin de Jong (1913) has been chosen because it represents a complete account, supplied by native raconteurs, of the sequence of events previously described. The rendition collected by de Jong was transcribed in the native language and later translated into English — his original intent had been to supply an orthography of Objibwa grammar. When compared to other known versions of this part of Nanabozho's adventures, de Jong's account agrees in all essential respects. Notably this sequence is well known among the Algonkian Indians, although, because of its length and complexity, complete versions were only infrequently obtained.

Chronologically, the series of events to be analyzed unfolds in the order of Nanabozho's birth, the Jonah and the enemy on the island incidents, and finally the re-creation of the world, in the time of origins. These three periods have been separated in this paper and designated as *periods one, two, and three* respectively — primarily for purposes of analysis.

Collected in the summer of 1911 at Red Lake Reservation in Minnesota from Eskwegabaw and Debeizig, both native raconteurs, and translated by Joe Roy, the tale is as follows (de Jong 1913:iii-iv). (For a verbatim transcription of the myth refer to Appendix 1. Specific references to the complete text are noted by line numbers in the paper.)

Period One

The story begins with an old woman and her daughter. The daughter is warned by her mother not to face in a certain direction. The young woman violates her mother's prohibition and is impregnated as a consequence. Within her womb twins fight for the right to be the first to emerge. In giving birth she dies. Her mother discovers one of her offspring, a rabbit who retrieves fire from some Indians. The grandmother makes a sweat lodge for

the rabbit who turns into Nanabozho when he emerges from it.

Nanabozho's grandmother tells him that it is his twin brother Flint who killed his mother during childbirth. Nanabozho finds Flint who is using an axe to shave flint chips from his shins. He tricks Flint into revealing what will kill him. Using small stones he succeeds in chipping pieces from his brother's body until he perishes.

Period Two

Nanobozho's grandmother tells him that his grandfather has been killed by a supernatural being known as Whale. Nanabozho sets off in his canoe and, along with a squirrel is swallowed by the whale. Using a knife he cuts pieces from the whale's insides until it is killed. Nanabozho brings the whale to his grandmother who makes oil from the carcass. He next loads the fish oil into his canoe and sets off across the water but is trapped in some pitch. Using the fish oil Nanabozho frees his canoe and arrives at the home of his brother. They do battle and Nanabozho kills him by shooting an arrow into the knot of his hair.

Period Three

Nanabozho encounters a wolf pack and hunts with them (he is first transformed into a wolf). When it is time to part one of the young wolves is left in his company (referred to as his "nephew"). Nanabozho has a premonition and warns Wolf never to jump across a stream. Wolf violates Nanabozho's warning and falls into the water where he is taken by the underwater manidos. Nanabozho meets Kingfisher who tells him of Wolf's fate and indicates where the underwater manidos emerge from the water. He goes to this spot and transforms himself into a tree stump. The underwater manidos emerge and test the stump which they suspect is Nanabozho. After assuring themselves that it is not him they lie down and go to sleep whereupon Nanabozho reverts back to human form and shoots the chief. The underwater manidos flee into the water.

Nanabozho next meets an old frog woman who instructs him in the techniques which she is to use to heal the wounded chief. Nanabozho kills her and dons her skin as a disguise. He goes to the manidos' camp and is taken to the lodge of their chief. Here he kills him by pushing the protruding arrow further into his body. As a consequence the flood waters rise and Nanabozho flees from the underwater manidos' camp, taking his nephew's skin with him. The world is inundated and Nanabozho and some animals seek refuge on a raft. Breathing on his skin, Nanabozho brings Wolf back to life. The animals on the raft dive for some earth but only muskrat succeeds. With the bit of earth retrieved Nanabozho re-creates the world.

The series of events presented here represents only part of the mythol-

ogy dealing with the adventures of Nanabozho in Ojibwa folklore. Other stories of his escapades are well known. These are largely of a trickster variety in which he is presented as a deceiver, a dupe and a fool. In addition, a number of tales tell of Nanabozho's prowess as a transformer, with the ability to change the face of nature. For the purposes of analysis, however, only the previous episodes will be examined. The reason for this is that these events illustrate a structural relationship which demonstrates the multi-mediational ability — as per Lévi-Strauss' understanding of the function of mediator in myth — of Nanabozho within the native tradition.

An interesting feature of de Jong's account, and one which is significant to the analysis which follows, is the recounting of the theft of fire incident. Functionally, this part of the myth is the same as the killing of Nanabozho's brother Flint also in period one. As noted, in de Jong's account a rabbit is responsible for bringing fire to mankind, which is then distributed among the people. Mac Linscott Ricketts observes that this is the "earliest and most typical kind of Trickster-Hero myth" (Ricketts 1964:589). His claim is corroborated by the fact that Nanabozho is seen as a rabbit — or, typically the Great Hare — in the earliest sources available on him. However, in the vast majority of the recent accounts Nanabozho appears as an anthropomorphic being. This is significant because in his battle with Flint, his evil twin brother, Nanabozho gives Flint — a cultural instrument — to mankind. As Schoolcraft notes, flint among the Ojibwa was used for making fires: "Fragments were cut from [Flint's] flesh, which were transformed into stones, and [Nanabozho] finally destroyed [him]. . . . All the flint stones which were scattered over the earth were produced in this way, and they supplied men with the principle of fire" (Schoolcraft 1969:317; see also Densmore 1929:142-143; Jenness 1935:16). In this way, two mythic events account for the culture hero's role in the origin of fire. In the one, however, Nanabozho is viewed theriomorphically, while in the other, he is viewed anthropomorphically.

Ricketts claims that among the "*ancient* Algonkian Indians [Nanabozho] was the 'Hare.' Among the modern Algonkians . . . he usually appears as an anthropomorphic being . . ." [emphasis mine] (Ricketts 1966:328). Consequently, in de Jong's account an intermingling of two tales has occurred, which is by no means uncharacteristic of Ojibwa folklore. The reason for this can be partially accounted for by the nature of story-telling among these Indians, which was of an episodic nature (Skinner 1913:5), where tales told as discrete units could, and often were intermingled with other tales (Kirk 1970:75). Here, an older Algonkian concept — the theriomorphic trickster-hero — has been mixed with a newer one — his anthropomorphic form. Margaret Fisher notes that even the oldest available versions of Nanabozho's early adventures "have a composite character" (Fisher 1946:231). The reason for this is due, as mentioned, to the influence

of ancient Algonkian concepts on the one hand, and Iroquoian ideas on the other. As Ricketts points out, "The Flint Man as the embodiment of evil in the world is a distinctly Iroquoian idea. . . . His presence in some versions of the birth of [Nanabozho] is due to the influence of the neighbouring Iroquois tribes" (Ricketts 1964:576).

Structurally these considerations may be said to have little import in terms of the analysis because, as Lévi-Strauss notes, a myth is made up of all its variants (Lévi-Strauss 1963:217). Yet, the issue here is not one of variants, but rather the nature of the intermingling which has occurred, which, as noted, is of two similar events; i.e., both tales account for the origin of fire. In the one instance this occurs as a theft — which Ricketts notes is an ancient theme — and in the other as an act of vengeance which is more characteristic of the other episodes of the myth. Furthermore, as the myth itself affirms, the rabbit is not referred to as Nanabozho; it is only after repeated sweat baths that the latter emerges as the myth's central protagonist (line 65). Here, as Alexander observes, the fact that the rabbit is referred to indicates that there is a tendency on the part of the native raconteur "to anthropomorphize the Great Hare [the rabbit] or to assimilate his deeds to an anthropomorphic deity" (Alexander 1916:297).

Given these considerations, then, only Nanabozho's battle with his brother Flint will be analyzed in the next section because: (1) the theft of fire and the death of Flint episode serve the same function, namely, to account for the cultural use of fire, and (2) those passages in the myth which describe the theft of fire incident belong to the oldest part of the native tradition and differ from the more recent accounts where Nanabozho is viewed anthropomorphically. In view of what Fisher has said concerning the composite nature of periods one and two, and considering Rickett's observation of the Iroquoian influence on Ojibwa tradition, the deletion of the theft of fire incident from the first period is required in order to (1) avoid mixing myths from different eras which deal with different mythological figures (i.e., Hare, Nanabozho) (Chevalier 1979:146), and (2) analyze the logical structure developed in response to outside influences, namely the Iroquoian influence which Ricketts and Fisher have singled out. For these reasons, in the analysis which follows, it will be necessary to draw upon mythological material from other accounts to elaborate on de Jong's version. This procedure is meant not so much as a corrective as a check on the validity of the accounts provided.

The Analysis

Sexual and Genealogical Codes

Themes addressing sexual and kin differentiations abound in the myth and are manifest in a logically structured manner.

The story begins with the rape of a woman when Nanabozho's mother is ravished by the wind, an event which is not atypical within Ojibwa society where neighbouring bands frequently spirited away one another's females (Landes 1938:30). As Landes observes, however, illegitimate children, as in this case, were held in some horror (Landes 1937a:17), and yet paradoxically so, because twin-births were also regarded as sacred; the children thus born were said to enjoy an intimate relationship throughout their lives (Hilger 1951:30). Here, however, this is not the case, and Nanabozho and his brother Flint are at odds from the outset. In the other periods, too, Nanabozho has skirmishes with a variety of foes who, in one way or another have aroused his ire, necessitating his fulfillment of the Ojibwa credo that personal affronts be avenged according to the *lex talionis* — "an eye for an eye and a tooth for a tooth" (Kinietz 1947:84-85).

A pattern which appears in each of the three periods is that of a warning which is violated precipitating the demise or near demise of the person being warned.[3] In the first period a young girl is warned not to face in a certain direction.[4] In the second a grandmother tells her grandson about the killers of her relatives, warning him of the danger involved in their pursuit. In the third period an uncle cautions his nephew about crossing a body of water, no matter how harmless it may appear.

Notably, the second period of de Jong's account does not make the grandmother's warning to Nanabozho explicit. However, the versions collected by Friedl (in Barnouw 1977), Leekley (1965), Reagan (1928), Ritzenthaler (1970), Coleman et al. (1971), Jones (1917) (two versions) and Blackwood (1929) do. Also, in the versions collected by Schoolcraft (1839, 1969, 1971), Radin (1914), Speck (1915), Jones (1917) and Reagan (1928), Nanabozho's grandmother warns her daughter about facing in a particular direction and not a supernatural being, as in de Jong's account.

With these considerations in mind, a structural relationship between the three periods may be established as follows. In the first period a female-female warning takes place between a mother and her daughter who, among the patrilineal Ojibwa, are of different lineages, but closely related by blood. In the third period, conversely, a warning is issued by one male to another when Nanabozho warns his nephew about the underwater manidos. This warning takes place between members of the same lineage, who are relatively distant consanguineous kin (de Jong renders *Odoziman* as "nephew," which is more precisely translated as parallel nephew) (Baraga 1966; Landes 1937a:9-10). The second period presents an intermediary situation in which Nanabozho's grandmother — a female — warns her grandson — a male — about the dangers involved in pursuing those who have killed his relatives. This warning takes place between members of different lineages who are, however, two generations removed. In the myth these warnings correlate with

the death of a female in childbirth, the death of a male at the hands of the supernatural beings of the underwater world, and the near death of the hero by his powerful enemies.[5]

Briefly stated, the first period is the inverse of the third, while the second presents an intermediary situation which combines features of both the first and third periods. This pattern of inverted opposites in the first and third periods and an intermediary situation in the second is evident throughout the myth and results from the fact that the three periods represent permutations of one another, their purpose being, as Lévi-Strauss notes, to repeat the message being transmitted by the myth, which, as will be extensively documented in the analysis to follow, concerns itself ultimately with the reconciliation of the tension between life and death.[6]

When viewed in terms of kin relations, period one ascribes the indirect killing of Nanabozho's mother to a close male kinsman, i.e., her son Flint, while inversely, period three relates the killing of Nanabozho's nephew to a distant — i.e., not directly related — creature. Period two again presents an intermediary situation where members of Nanabozho's family are killed by a large fish — i.e., a distant creature — and by someone across the waters, who, in the versions collected by de Jong (1913), Coleman et al. (1971), Friedl[7] (in Barnouw 1977), Jones (1917) (two versions) and Ritzenthaler (1970), is also referred to as Nanabozho's brother, hence, a close male kinsman.[8] (The death of a member of Nanabozho's family is also credited to the enemy across the water in the versions collected by Friedl (in Barnouw 1977); Jones 1917 (two versions); Leekley 1965; Ritzenthaler 1970; Reagan 1928; Coleman et al. 1971; and Schoolcraft 1839, 1969, 1971.)

The first period of the myth describes a hostile relationship between male kin which results in the death of a relative when Nanabozho kills his brother Flint in revenge for the death of his mother, thus violating his kinship ties through fratricide.[9] Here Nanabozho remarks that "they are of all kinds [... even people who are related] who are fighting" (lines 107-109), thus affirming that even among those who are close kin and of the same descent, fighting can erupt and death become the unfortunate outcome.[10] Certainly in-group antagonisms, such as those spawned by competition between brothers, was not an infrequent occurrence among the Ojibwa, and especially, as Dunning observes, among older and younger brothers (Dunning 1959:88-89). Here, though, a younger brother (and theoretically the weaker of the two) proves victorious over his older brother Flint. In the third period this situation of brotherly hostility is done away with, and instead a peaceful co-existence between an uncle and his theriomorphic nephew occurs, an inverse of the situation in the first period. In this instance a close male kinsman is also killed, but this time by a member of another group, i.e., that of the Frog-Woman, who Nanabozho refers to as "grandmother," a kinship term which,

among the patrilineal Ojibwa, designates the female of the second "ascending generation regardless of line," including mother's mother, mother's mother's sister, father's mother, and father's father's sister.[11] Here the myth affirms that those who are unrelated can also kill one another and be viewed as enemies. However, in the third period these events are inverted, and instead of Nanabozho killing his nephew, Wolf is murdered by those of another group. In the second period Nanabozho is himself nearly killed by the large fish and by a supernatural enemy — who some versions refer to as Flint — thus presenting an intermediary situation where those within and outside of the group can threaten one's existence.

Many ethnologists have observed that it is typical of the Ojibwa to repress feelings of ill will towards their neighbours. This applies particularly to relationships between brothers and between uncles and nephews, as Hallowell observes:

> There is considerable emphasis laid ... upon the solidarity of brothers. ... This means that quarrels between brothers ... are more shocking than those between cross cousins. And since the relation between a man and his mother's brother ... is a highly formalized one requiring at all times a display of respect and even continence of speech, this type of habitual attitude ... inhibits aggression. (Hallowell 1955:280)

In this instance, though, the mythology affirms that hostilities can occur not only among those who are outsiders, such as neighbouring tribes and villages, but even within the immediate family (Landes 1937b:102).

At the root of this repressed rage lies the individualism which epitomizes Ojibwa culture, as well as the feeling of pride and shame which underlay all social relations. Thus, in Nanabozho's quest for revenge the shame of having his relatives murdered spurs him to action, while pride earmarks his victories over his adversaries (Landes 1938:193ff.). These same feelings cause the individual to be wary in his dealings with others, ever on guard for the least slight to character, whether given or received, real or imagined. As a result, not only are repressed hostilities frequently seething below the surface, but feelings of persecution over the intentions of others as well (Barnouw 1955:345). To this extent, the warnings issued in the myth tell of the potentially hostile environment in which the Indian exists and of which he must be ever wary (Barnouw 1950:72).

As with many semi-nomadic peoples, competition for scarce resources was an accepted part of life. Throughout the three periods we hear the constant refrain of Nanabozho's desire to revenge himself for the deaths of his relatives.[12] At the same time, it is also evident that Nanabozho wishes to be the most powerful of beings, as the raconteur of de Jong's narrative acknowledges, he "killed every one who might have more supernatural power than

he'' (lines 196-197). Echoed in this theme of power, its quest and attainment, is the social atomism and rugged individualism which characterized traditional Ojibwa culture, where in eking out an existence from the harsh environment the lone hunter and his household became the paragon of Ojibwa identity.[13] As Landes observes:

> [The] hunter's lone pursuit of game in the winter [is] perfectly consistent with the game resources of the region. For there is little game, and at any locality hunting or trapping cannot be carried on by more than one man. The household which is fed by the proceeds of one man's hunting must of necessity be small. (Landes 1937b:124; cf. Barnouw 1955:341)

Certainly Nanabozho's actions in the myth hold true to this pattern. Yet at the same time he also functions as a mediator in the myth by pointing to contradictions within native schemes of reference, articulating these as polarities, and attempting to reconcile their antithetical positions through the mediation of the real life conflict which they address.

In the first period Nanabozho is the twin brother of Flint, while in the third he is referred to as Wolf's uncle. However, the renditions of the myth collected by Ritzenthaler (1970), Radin (1914), Hindley (1885), Jenness (1956), Coatsworth (1979), Ellis (1888) and Judd (1901) describe Wolf as Nanabozho's brother. This relationship is further corroborated in the accounts given by Barnouw (1977), Schoolcraft (1839, 1969, 1971), Coleman et al. (1971), Reagan (1928), Speck (1915) and Brown (1944) where three, and sometimes four brothers are born from the mother — typically Nanabozho, Wolf, Flint and a fourth.[14] Notably, too, de Jong's version states that Nanabozho and the enemy across the water are ''brothers'' (line 175). In some versions the latter is referred to as Flint, thus making him Nanabozho's twin. On this point Alexander claims that Wolf and Flint are actually one and the same person, who, for etymological reasons have been cast in separate roles (Alexander 1916:298). Hewitt takes up on this by adding that a confusion between the terms for Flint (*ma'halic*) and wolf (*malsum*) gave rise to the two figures being described as twins in some versions of the myth (Hewitt 1910:19).

It is interesting to note that for Lévi-Strauss, as mentioned previously, twins as mediators function to bring opposites into association. In doing this, however, they leave them individually distinct. Also, as noted, mediators emerge when the myth's logical contradictions remain unresolved. Within the three periods the tension which exists between members of the same and outside groups, as expressed by the fatalities which occur, are articulated via the twins, who prove unsuccessful in resolving the contradiction which underlies the tension. In the initial part of each of the three periods this tension is expressed primarily in terms of kinship categories, where both those

within and those outside one's group, those of the same and those of different descent, perish. As noted, this tension between kin is not atypical within Ojibwa society, and Nanabozho, as the myth's central mediator, seeks to reconcile these opposites. Yet the tensions within society which pit kin against kin and non-kin remain. As the twin brother both of Flint in the first period (and some versions of the second, where the enemy across the water is identified with the latter) and Wolf — by some accounts — in the third, Nanabozho is unsuccessful in his bid at reconciling this opposition. As a consequence, in bringing these opposites into association, one of the twins perishes at the hand of both close and distant kin. At the same time, too, the life-death polarity remains unmediated.

Lévi-Strauss notes, however, that "a pair of twins is a sign of weakening in the functions of the mediator." In his analysis of Asdiwal, this becomes all the more clear "from the fact that, only shortly after their appearance on the mythical scene, the twins die..." (Lévi-Strauss 1976:166). Here, too, the twins (Flint and Wolf) are killed. Nanabozho also comes close to death at the hands of the large fish and the enemy across the water, but as the myth's central mediator (and the hero of Ojibwa folklore) he survives, persisting in his attempts at reconciling the myth's central contradiction.[15]

Lévi-Strauss asserts that the dialectical structure of myth, in seeking mediation of its contradictions through a third term, generates — if the mediation is unsuccessful — a "chain" of mediators who attempt to resolve the opposing positions. In this chain-like structure mediators "of the first order, of the second order, and so on" appear (Lévi-Strauss 1963:225). As Lévi-Strauss notes, the reconciliation of the opposites may require many mediators, as well as many different dimensions and codes to address the contradictions (ibid.:226-227). So, too, in the mythology of the Ojibwa Nanabozho mediates between opposites posed in terms of several codes, the next of these being the cosmological and economic (see Figure 1).

Cosmological and Economic Codes

Present throughout the myth and throughout each period is a three-fold relationship played out in the sky, on the earth, and in the water between ordinary men, the gods (manidos) and the mediator between men and the gods, the half-god Nanabozho.

In Ojibwa cosmology manidos were supernatural beings who inhabited the sky, land, and water, and assumed diverse forms such as animals, rocks and the cardinal directions, to name a few. The word manido has been rendered variously as "spirit," "supernatural being" (Hallowell 1960:50, n. 33), and even "god," which one author claims seriously reduces "the combination of substance, power, and reality which the native word can

Figure 1
A Structural Analysis

Period 1			
Female-female warning and violation (mother-daughter: different descent but close by blood)	female killed by her son	Flint responsible for death	Nanabozho kills Flint: He creates a cultural product at the cost of fratricide.
Period 2			
Female-male warning and violation (grandmother-grandson: different descent but two generations removed by blood)	near death of Nanabozho by distant creature and brother (in some versions)	Large fish and enemy across water responsible for death	Nanabozho kills fish: He creates a cultural product (fish oil — cooking) obtained through hunting. Nanabozho kills enemy: He creates a cultural product (scalp) obtained from war.
Period 3			
Male-male warning and violation (uncle-nephew: same descent but distant consanguineous ties)	Wolf killed by a distant creature	Chief sea lion responsible for death	Nanabozho kills Chief of Underwater Manidos: He loses a cultural product because of murder.

express. For in the manito world, accessible only through the doorway of dreams, were vested all the powers that determined whether the hunter would survive or perish. To enter this world was to step into, and not out of, the real world'' (Dewdney 1975:37). Briefly put, manidos were persons of the ''other-than-human class,'' characterized as ''sacred,'' ''strange,'' ''powerful'' and ''remarkable'' (Hallowell 1960:44). In native cosmology the welfare of the Indians became irrevocably hinged to the benevolence of these beings, and because of this, conflicts between their world and that of men invariably arose.

Nanabozho's mother, as in many myths of the hero, is human and mor-

tal, while his father is supernatural, thus making him and his brothers demi-gods.[16] In period one the demigod Flint is chopped to death by his brother Nanabozho, while in period three the chief of the supernatural beings who resides in the underwater world is slain. As noted, the identity of the enemy across the water is sometimes equated with that of Flint, and, therefore, period two can be said to present an intermediary situation where a demi-god — the enemy across the water — and a supernatural being — the large fish — are killed.[17]

To this point the myth has described the deaths of Nanabozho's brother, a large fish, an enemy, and a wolf. These have led to the creation of cultural items such as flint, fish-oil, scalps (not specified in de Jong's account but common in others) and a wolf-skin door covering.[18]

Flint, as previously stated, is instrumental in the making of fires; fish oil is used for cooking and for door coverings (Cooper 1936:3; Danzinger 1978:9-10; Densmore 1929:128; Ritzenthaler 1970:19). Scalps, taken by raiding warriors from enemies, were used in victory celebrations. Like hunting, warfare constituted an important part of Ojibwa culture, and scalps betokened valour and bravery on the part of the warrior (Reagan 1919:348; Danzinger 1978:24).

What is noteworthy in these incidents is that in vanquishing his enemies Nanabozho acts as a trickster; this is clearly evident in his battle with his brother Flint when he tricks him into revealing the agent which causes his demise (small stones). Similarly, Nanabozho dupes the enemy across the water into believing that harmless bulrushes will kill him (see Appendix 1) and he tricks the underwater manidos by disguising himself as the Frog-Woman and a tree stump (later to retrieve Wolf's skin). However, not only do these incidents present Nanabozho in his role as a trickster, but as a culture hero as well, insofar as the gifts of culture are presented to mankind when he creates, in the first period, a cultural implement (flint) by killing his brother (Densmore 1929:143). In period three he loses a cultural product — i.e., his nephew's hide — as a consequence of the murder of Wolf (Densmore 1929:27). In period two Nanabozho creates — initially — a cultural product (fish oil) which is used for cooking and obtained by means of boiling, i.e., through cultural processes (Densmore 1929:42). In the latter half of the period he creates a product derived from a human being — hair — which is obtained through warfare and used culturally, i.e., in the war dance ceremonial (Densmore 1929:135). Briefly, the first, second and third periods illustrate the creation of cultural products — flint, fish oil, hair, animal skins — which Nanabozho has wrested from the manidos, thus demonstrating how he functions as a culture hero in the myth, mediating between man and the gods, and nature and culture by giving the Indians those culturally transformed objects indispensable to their survival. Yet these occur as a result of the death

of his nephew and brother, again articulating, this time in terms of cosmolog-
ical and economic codes, the myth's central contradictions, that between life
and one of its necessary conditions, death.

While Nanabozho is the twin brother of Flint and Wolf (in some ver-
sions) in the initial segments of each of the three periods, as these progress
his role as mediator changes to that of trickster and culture hero in response
to the change within codes and the need to re-address the contradictions
presented. As Lévi-Strauss notes, unsuccessful mediation of the myth's oppo-
sites requires that the mediator employed to reconcile their antithetical posi-
tions be changed. As a result, Nanabozho functions as a trickster and a cul-
ture hero in the latter portions of each of the three periods, mediating
between men and the gods, and nature and culture by obtaining cultural gifts
for mankind from (super)natural sources. However, the fact that both of his
brothers die, resulting in cultural life, presents the following paradox: death
in nature (a fish and a wolf) leads to life in culture. As a result, the mainte-
nance of life presupposes the destruction of both human and animal forms.
Consequently, animals must be killed for their skins, fish for their oil, and
enemies because they threaten one's existence. These enemies can be kin and
they can also kill kin, and it is in this way that the life-death dichotomy is
made reciprocal between close kin and distant kin, and man and nature,
inasmuch as each of these polar opposites can, and must, kill and be killed.

As already noted, in a society of semi-nomadic hunters and gatherers
social tensions within and outside one's group inevitably arise when compet-
ing for nature's scarce resources (Barnouw 1950:15). At times these tensions
can result in death, for reasons of greed related to the status of "first-born"
(and hence the more powerful) or revenge over the death of a loved one — as
the myth has demonstrated. Likewise the procuring of items of cultural value
from natural sources often entails death, which occurs in a cultural context
either through hunting, warfare, fratricide or murder. For Lévi-Strauss the
trickster functions to bring the myth's opposites into juxtaposition, in this
way bringing to the fore the distinction between what is natural and what is
cultural: wolves exist in nature, but in the myth they can also act as one's rel-
atives (a cultural designation); flint is derived from nature, but in the myth
Flint is also the brother of Nanabozho (here too, a cultural designation).
Nanabozho himself is an ambiguously cultural and yet natural being, living
as a man and yet associating with animals such as wolves, fish, muskrats,
frogs, beavers, otters and loons (Barnouw 1977:50-51; cf. Blackbird
1887:72). What is important to note, however, is that it is in functioning as a
trickster that Nanabozho's heroism is made evident: mediating between men
and the gods, and nature and culture by duping his would-be killers, he perse-
veres in his relentless quest for survival, killing his enemies, hunting for
game, and revenging those who have been wronged (Ricketts 1966). In the

process, too, as the myth has demonstrated, mankind is benefited, for as Nanabozho observes in vanquishing Flint: "How could the human beings have been able to increase in the long run if . . . [such] a dangerous being . . . were allowed to live on" (lines 113-115). At the same time as he rids the world of these dangers Nanabozho also creates items of cultural value from their remains, thus contributing to life by providing for its preservation and prolongation. Yet still death is made the unfortunate outcome, and even in addressing the tensions in Ojibwa society which exist between kin and non-kin, that which exists in nature and that which exists in culture, the contradiction posed by the life-death polarity remains unresolved. Consequently, while the myth may perhaps come to terms with the nature-culture dichotomy (vis-à-vis the trickster-culture hero), it leaves unresolved the paradox of life and death in relation to the kin-non-kin and man-nature linkages.

Cosmographic and Zoological Codes

All three periods describe an initial warning which correlates with the death or near death of a male or female. The cause of death in the first period is the birth of twins, precipitated by Nanabozho's brother Flint, who, in de Jong's version of the myth, is associated with the north (lines 75-76). This supernatural impregnation is, in some instances, initiated from above by the wind or by the sun, who, according to de Jong, resides in the south (line 4). In the third period an inverted situation occurs where the cause of death comes from below, the domain of the underwater manidos.

This cosmographic schema can be viewed in terms of both horizontal and vertical components where, on the horizontal plane Nanabozho kills Flint in revenge for the death of his mother on land, and on the vertical he slays the underwater manidos by descending from land to the bottom of the water. In period two, both a horizontal and vertical dimension are evident, where Nanabozho travels horizontally across the water to the home of his enemy and vertically inside the large fish from the surface of the water to the bottom.

What is noteworthy in the third period is that the Kingfisher, Frog-Woman and flood sequences act as semi-independent units, and possess their own structure, phrased in terms of oppositions, correlations and mediations. Typically, if only the Kingfisher episode is presented, exclusive of the Frog-Woman series, the flooding of the world follows immediately upon the shooting of the manido. This is found to be the case in the versions of the myth collected by Blackbird (1887), Radin (1914), Wilson (1886), Kohl (1860) and Ratzenthaler (1970). However, in de Jong's account, and others, the initial shooting of the manidos precipitates only a minor flood — if one occurs at all — and the actual deluge comes only after Nanabozho has tricked the Frog-Woman into revealing the location of the wounded chief whom Nana-

bozho quickly dispatches. As Fisher observes: "Some versions have the deluge follow immediately on the wounding of the manitou. Other versions place the flood after the manitou has been killed. Still other versions have the waters rise and then recede after the wounding with the true deluge occurring after the death of the manitou" (Fisher 1946:231-232, n. 12). This structural feature allows the myth once again to address the major dilemma which has unfolded to this point, that being how to reconcile the contradiction which exists between life and death.

With this problem in mind, the following structural relationship emerges: Kingfisher, a creature of what may be called the "lower" sky — as he spends the major part of his time on land searching for fish — stands in an inverted relation to the Frog-Woman, who is an emissary of the upper reaches of the underwater world, as frogs never stray far from the water's surface. An intermediary situation can be said to occur when the raft containing Nanabozho and the animals is on — but not in — that water and yet above the land (i.e., the old earth) but not in the sky — a position between the cosmographic domains which Nanabozho is called upon to mediate in this final part of the myth. To facilitate this reconciliation of opposites, various animals are employed who are themselves of both worlds. Thus Kingfisher resides in the upper reaches of the earth and yet preys on those in the water. It is his information which brings Nanabozho to the spot where the underwater manidos emerge (lines 236-237) and leads, in some versions of the myth, to the inundation of the world. The Frog-Woman, too, is a creature who mediates between land and water, and provides Nanabozho with the important information concerning the location of the wounded chief. But, ultimately, it is the earth-divers who provide the medium by which life is restored. In order to enlist the aid of these various animal mediators Nanabozho must make use of his powers of trickery and deceit.

Lévi-Strauss has pointed out that the trickster in myth places opposites in juxtaposition. This aspect of Nanabozho's personality is manifest in period three when he tricks the underwater manidos by changing himself into a tree stump. As their leader observes: "Nanabozho has all kinds of tricks" (line 247). Similarly, Nanabozho tricks the Frog-Woman into telling him the location of her village and teaching him her medicine songs. In the former instance his disguise — as a tree stump — signifies that, in some sense he is dead, and yet still very much alive — this is part of the deception which he performs. So too, in the Frog-Woman sequence his disguise indicates that he is dead, inasmuch as it is only the skin of the actual person which actually hides him (cf. Radin 1956:128). In both cases, though, death is presented as an illusion, where what is dead may really be alive, what is alive may be dead, and, furthermore, what appears to be harmless may actually be quite harmful.

In the flood sequence each of the earth-divers drowns and is then brought back to life again. These animals, significantly, are all amphibians — beaver, otter, loon, muskrat — and to this extent can be viewed as mediators between land and sky, and water and land, respectively. However, in the myth's final sequence Nanabozho does not deceive, but is, in a sense, deceived, in that Muskrat, the smallest of the divers and least likely to succeed, is successful in retrieving some earth from the bottom of the water. Here, as in Nanabozho's disguise as a tree stump and the Frog-Woman, appearances prove to be deceptive, and, in deceiving, one must be careful not to be deceived. Thus whereas the Kingfisher and Frog-Woman sequences present similar tricks in relation to the life-death theme (i.e., dead stump which is actually alive and live Frog-Woman who is actually dead) leading to the destruction of the world, the flood sequence shows Nanabozho being deceived by Muskrat (who dies and is then brought back to life again) resulting, however, in a fortunate outcome. Just as Muskrat appears unlikely to succeed in his task, so too was Flint, the large fish and the powerful enemy across the waters. As in this instance, appearances prove deceptive, and, consequently, the seemingly weaker protagonist prevails over his adversaries, a theme which runs throughout the myth and which is prevalent in Ojibwa folklore.[19]

In the world view of these Indians metamorphosis was a contingency for which one must be ever on guard.[20] In fact, "the whole socialization process in [Ojibwa] culture impresses the young with the concepts of transformation and of power, malign or benevolent, human or demonic. These concepts underlie the entire Indian mythology" (Hallowell 1960:38). To this extent one is never sure of the power possessed by others, and therefore caution is advised in all relations: "What looks like an animal, without great power, may be a transformed person with evil intent.... Caution is necessary in social relations with all classes of persons" (Hallowell 1960:39-40). This dictum holds especially true in the case of Nanabozho who proves that he is the most powerful of beings in his battles with his adversaries, even though he is presented in the role of the underdog. So too is the least likely of the earth-divers successful in his mission. Within Ojibwa cosmology trickery can take many forms, but ultimately it is linked to this notion of metamorphosis, where both men and animals may possess unexpected power, as evidenced in the case of Nanabozho and the animal mediators.

For the Ojibwa the land-water dichotomy constituted an important part of their world view, according to which those existing in the underwater world stood in an opposite and negative relation to the inhabitants of the land (cf. Kohl 1860:325). To a culture which populated the woodlands of the Great Lakes this opposition was a very real one. That those who existed on land could not also live in the water was as self-evident a fact as that those of

the water were precluded from residing on land. Men especially had to abide by this dictate, for to ignore it would bring death, as attested to in the myth by the fate of Wolf. However, at the same time a certain class of beings do not readily fit into either group. These are the animal mediators — beavers, otters, frogs and so on — who are employed by Nanabozho to provide the necessary channel between these conflicting and yet complementary domains. Thus Kingfisher and the Frog-Woman tell Nanabozho the location of the underwater manidos, facilitating his traversing of the two worlds, which leads ultimately to the destruction of the one. Contrariwise, in the sequence of events which relates the flooding of the world, the efforts of the animal mediators lead to a propitious outcome for the land-dwellers, and an unfortunate one for the beings of the underwater world, when their attempts at retaliation are thwarted by Muskrat.

As in his efforts to defeat those with more supernatural power than himself, here too the heroic aspects of Nanabozho's personality become evident, when he revenges himself of the death of Wolf and re-creates the world. In this instance he not only mediates between the domains of land and water, which are perpetually in conflict in Ojibwa cosmology, but between life and death as well. As a trickster Nanabozho places these opposites in juxtaposition — as entailed in the nature of his disguise — but achieves a mediation of the myth's central contradictions only in its final sequences when he restores Muskrat and the earth-divers to life (see Figure 2).[21] It is in this instance that he functions as a messiah who, for Lévi-Strauss, "unites" the opposites by reconciling the myth's ultimate contradiction and in the process re-creates the world (see Figure 3) (Densmore 1929:97; Barnouw 1977:252-253).

Conclusion

As with any structural analysis of myth several interpretations are possible (Maybury-Lewis 1970:159). Certainly the analysis which has been presented here is no exception. This is not to say, however, that the structure which has been elicited is incorrect, but only that given the richness and complexity of the native lore much can be extracted from its study. What is important in this investigation, and what can be gained by it, is an understanding of the role which Nanabozho plays in the native tradition, as well as an appreciation of why he combines the apparently disparate traits of trickster and culture hero in one personage. Throughout the myth a change in Nanabozho's function as mediator has been evident — from twin, to trickster, to culture hero. Whereas the twins brought the opposites into association, the hero and the trickster went a step further.[22] This development culminates in the myth's finale where Nanabozho is again called upon to reconcile the myth's central contradiction.

Figure 2
A Structural Analysis (continued)

Period 3 Kingfisher: A creature of the lower sky	Nanabozho deceives through appearances: dead tree stump which is actually alive.	DEATH: Flood*
Period 3 Raft: Flooded land in sky. Earth-divers: Animals of land and water (amphibians)	Nanabozho is deceived: living earth-divers who only temporarily die.	DEATH: Drowning and revival (life) leading to new life through re-creation
Period 3 Frog-Woman: A creature of the upper water	Nanabozho deceives through appearances: living Frog-Woman who is actually dead.	DEATH: Flood*

* A flood can take place at either of these points in period three.

Figure 3[23]
The Resolution of a Contradiction

Initial Pair LIFE	First Triad	Second Triad	Third Triad	Resolution LIFE
	Kin (death)			
		Culture (death)		
			Above (death)	
	Twins·····Trickster-Hero·····Messiah·····			Rebirth and Re-Creation
			Below (death)	
		Nature (death)		
	Non-kin (death)			
DEATH				DEATH

In progressing through its various codes the myth articulates the basic opposition evident throughout between life and death. With each change in mediator a transformation in codes has taken place and mediation has been sought. In the case of the twins death resulted. For the culture hero death in nature led to life in culture, but so too did human death, namely, the killing of his brother and an enemy. This left the paradox of life and death unresolved, which was re-addressed by the trickster. But he too was unsuccessful in coming to terms with the myth's central contradiction, and the ruse which he

employs — and which others employ against him — precipitates disastrous consequences. Although his disguise as a tree stump and the Frog-Woman succeeds in duping the underwater manidos, the result is that the world is brought to an end, again pointing to the incomplete reconciliation of the life-death opposition. Yet in the conclusion of the myth these opposites are successfully resolved through a process of rebirth, in which Nanabozho, acting as a deceived messiah, restores Muskrat and the earth-divers to life and re-creates the world (Lévi-Strauss 1978:32-33).

The major thematic elements present in the myth are given as sexual, genealogical, economic, cosmographic and zoological categories. These are expressed in terms of polarities: male-female, kin-non-kin, gods-men, natural product-cultural product, land-water, above-below, land creature-water creature. Each of these polar opposites defines a conceptual category which is articulated at the semiotic level via a code and through which the unconscious underlying message of the myth is transmitted.

As a mediator Nanabozho attempts to resolve the conflicting positions presented in the myth. Within the conceptual universe of the Ojibwa, contraries are phrased in terms of various categories. But contradictions exist within these categories only to the extent that they address genuine areas of tension within Ojibwa society, such as between kin and non-kin, nature and culture, and life and death.

The central contradiction between life and death is developed thematically through the use of various codes (these define the ''slates'' which appear in the myth). Within the three periods each code is transformed when mediation proves unsuccessful. Permutations occur among the three periods where the first and the third represent inversions of one another while the second presents an intermediary situation. The codes within the three periods are transformed when a new type of mediator is presented, who again seeks to address the ambiguities within the myth.

Kinship themes, as articulated by Nanabozho's relationship to those within and outside his group, are used to illustrate conflicts between those who are outside the family and those who are related by blood, both of whom can simultaneously kill and be killed. Consequently, brothers, mothers, nephews, grandfathers, and grandmothers perish, either for reasons of power, as in Flint's desire to be the first born, or revenge, as in Nanabozho's desire to rid the world of those who have done him an injustice.[24] At the root of this hostility is the rampant individualism which is endemic to Ojibwa culture, in which even the slightest affronts to character were seen as major transgressions against the person, often rectified by recourse to death.[25] The fatalities presented occur as a result of fratricide, murder, hunting and warfare, with the latter being an especially ''important feature of traditional Ojibwa culture.'' Men waged war on their enemies to ''avenge the combat deaths of fathers, brothers and uncles, and to annex new

hunting ground'' (Danzinger 1978:23; cf. Kohl 1860:390). As the myth has demonstrated, however, enemies can come from one's own family, as well as from other tribes (Densmore 1929:132).

The opposites of nature and culture, addressed by the cosmological and economic codes, proved to be contradictory in terms of the life-death polarity inasmuch as economic resources can be obtained from both natural and cultural sources, precipitating the death of both men and animals. A mediation between nature and culture is achieved when Nanabozho takes on the role of the hero. In this instance, man's economic well-being comes about not only by transforming that which exists in nature into cultural products, but also by eliminating economic rivals in order to add to one's material wealth. As a result, wolf skins and fish oil are procured from nature through hunting, while warfare and murder extract economic goods from those within culture, namely brothers and enemies (Danzinger 1978:23). As noted, however, the life-death polarity, which is the central contradiction being addressed, remains unresolved until the myth's conclusion. To complete the ''chain'' of mediation which Lévi-Strauss describes, a new type of mediator is required.

Kenelm Burridge observes that Lévi-Strauss' categories of life and death are contraries, but ''in what sense are they necessarily 'contradictions?' ... 'Life and Death' are alternatives: either 'alive' or 'dead.' A 'real contradiction' would involve, at any level, the experience of 'life' and the experience of 'death' at one and the same time'' (Burridge 1967:112).

Burridge's point is well taken, but it ignores the fact that the contradiction in and of itself is not at issue in Lévi-Strauss' programmatic (in this instance) but rather its *resolution*. Thus the contraries of life and death become contradictory only to the extent that re-creation becomes possible or desirable. Certainly life and death are opposites, and to this extent also contrary, but they become contradictory only to a world view which concedes that the negation of life is a transitory phenomenon, and that new life is an immanent possibility. The ''message'' being transmitted becomes then: life and death are temporary states and because of their fluctuations present themselves ambiguously in culture, where what is alive can perish, and what is dead can lead to new life.

Entailed in this notion is the native concept of *pimadaziwin*, which designates life in its fullest sense, denoting longevity, health, and freedom from misfortune. ''This goal cannot be achieved without the effective help of both human and other-than-human ''persons,'' as well as by one's personal efforts,'' as has been demonstrated in the myth by Nanabozho and the animal mediators (Hallowell 1960:45). Among the Ojibwa, threats to one's health and well-being were an ever-present possibility. These could come from nature should, for example, supplies of game prove insufficient, as well as from one's fellow men, who competed with each other for nature's scarce

resources. It is not surprising then that tensions within society should exist in the relations between men and their environment, which, depending on circumstances, may be either malign or benevolent. Within the myth these cultural anxieties have been articulated and assuaged, to an extent, by the possibility of the restoration of life through rebirth and re-creation, which is allowed to both men and animals, as one informant observes: "Everything, trees, birds, animals, fish (and ... human beings also), return to life; while they are dead their souls are merely awaiting reincarnation" (Jenness 1935:21; see also Dewdney 1975; Hoffman 1891). In this way life and death are made only temporary interruptions in the ebb and flow of a set of universal processes which allow for the compatibility of these antithetical states (Barnouw 1977:252-253).

Yet, curiously, one is left with doubts as to the myth's success in resolving *all* of the contradictions which it has presented, for in its final passages a wolf dies of old age and the hero, it appears, is resigned to roam about the earth, as if in pursuit of some final solution to what may be an irresolvable dilemma (lines 304ff.).[26] Confined to this apparent pattern of nomadism, the myth affirms that Nanabozho's pursuit of game and his battles with his enemies are inseparable from the endless round of life and death which goes on in spite of his best intentions. The story of the Ojibwa trickster-hero's exploits concludes without having fully eliminated the conflicts which appear in the myth between men and their struggle for survival, or having fully justified the necessity for man's killing his rivals in order to add to his material well-being. These remain as contradictions in their own right: if one is to prevail over the environment, one's relatives and fellow men must be killed. In spite of this, however, as the myth's central mediator, Nanabozho does hold out the hope for new life through rebirth and re-creation by offering an attenuated resolution to the myth's central contradiction.[27] From this point of view, trickster and hero represent stages in this process and highlight the ambiguous nature which Lévi-Strauss attributes to the Amerindian mediator figure, who in this instance combines roles of an antithetical nature — trickster and hero — as a logical consequence of his function within the myth.

In the structuralist's framework, trickster and hero are thus seen as two aspects of the same personality, as Lévi-Strauss notes: "Not only can we account for the ambiguous character of the trickster, but we can also understand another property of mythical figures the world over, namely that the same god is endowed with *contradictory* attributes ... [emphasis mine]" (Lévi-Strauss 1963:227). Consequently, trickster-like qualities of cunning and stealth can be associated with a mythological being as also can heroic attributes. These traits are a function of the type and degree of mediation being sought and point to the contradictory nature of not only the trickster-hero, but reality as well.

In a revealing passage from one raconteur's account of the myth, Nana-bozho, in slaying the enemy across the water (who is his brother) says: "Now, therefore, this is what shall come to pass that people are to die.... Although one could bring it to pass that not till they have reached old age they should die, yet nowhere would they have room if this should take place. [Death] is only a change of going from one earth to another" (Jones 1917:21; cf. Jones 1917:39). Following the analysis which has been presented, in the myth death too is but a passage from one world to another, which is facilitated for the Ojibwa by the trickster-hero Nanabozho, who in the end shows them the way to new life through the symbolism of death and rebirth.

Appendix 1

Period One

An old woman, it is told was [lit. is] living somewhere. Only her daughter was [lit. is] with her. Once this young woman was spoken to by somebody [this means: some invisible supernatural being]. This she was told. Whenever you go out, never sit with your face turned due south or west or north or east. Once
5 she forgot to do as she had been told and sat with her face due south. After some time she became aware of something alive within her body. And from this time she was steadily growing in size. So she was asked by her mother [and] she was told: what does this mean that you happen to be like this? And the young woman answered: I do not know how I come to be like this. And the
10 old woman said to her daughter: when this happens to somebody it is only because man and woman are together that it happens to her [lit. to somebody]. At last this young woman was unable to walk because she was too big. At this time they heard them talk [They heard one of them] saying: I shall be the eldest.[28] Again [another] one said [lit. says]: No, it is me who shall be the
15 eldest. The old woman hears that somebody speaks to her [and] tells her: Come, make your house strong, put many sticks all round and also on top.[29] So the old woman did. By this time they heard them talk and quarrel about which would be the first to go out. Finally they came to blows. Then [she was blown up and] it is absolutely unknown where that woman and the wigwam came
20 down. Only the old woman was left [lit. was there]. And that old woman cried. At a little distance [from the spot] she built a home again.[30] But once in a while of course she went crying to the spot where they used to live. Once going [thither again] she found a clot of blood of this size [here the narrator showed his thumb].[31] She took it and wrapped it up in birchbark. So at this time orig-
25 inated the way the Indian usually takes care of that what is called "the wrap-ping up at the head" when one of his relatives die [lit. so now it is from which originates the Indian who uses to take care of it some decayed (euphemism for deceased) relatives, that what is called, "the wrapping up at the head" (or "what is wrapped up at the head")]. So she wrapped that [clot of] blood up in
30 birchbark and put it under the place where she used to lay her head while sleep-ing [lit. whenever she sleeps]. Once while she sleeps she hears somebody talk-ing to her, saying this: My mother, I arrive. And she woke up and looked under her pillow where she thought the sound came from and untied the birchbark.

Then she found there a little rabbit. Well, from that time she took care of him
35 and after some time he was getting a little bigger [lit. till after some time he
etc.]. And once, while she was sleeping again, she dreamt that somebody said:
Where shall we get the fire [from]? And she answered: [from] nowhere. But
about the time when it was getting towards autumn he spoke to her again: I had
better try to get it, and he also said to her: Put fire-wood ready at hand. And
40 then she saw the little rabbit going away and crossing the lake lengthwise, run-
ning on the surface of the water, until he arrived at the other side. There he sat
down quite near the water and when he had seated himself, the wind rose until
the waves were striking against his body. And he got wet through. Opposite the
spot where the little rabbit sat down [some] Indians were living. At this time a
45 certain young woman just happened to go out fetching water and saw the little
rabbit who was sitting near the water. This young woman thought the little rab-
bit nice, so she took him, wrapped him up and took him home. They were two,
these young women, at their home. When she came home she said to her sister:
Just look at him! They were overheard by their father and he said to them: He
50 does not look all right, that one! kill him! Over there on the earth that [crea-
ture] Nenabozo has been born by now, he has all kinds of tricks. [But] the little
rabbit, looking round, saw the fire. And suddenly the little rabbit made a spring,
grabbed the fire and ran away. And that old man tried to overtake him. Of
course (he) the little rabbit runs on the surface of the water but (he) the old man
55 is not able to run on the water (he too). So the little rabbit escaped. Once the old
woman [who had been looking out for him] saw that the little rabbit came run-
ning towards her and, when he arrived, threw the fire down [and then] he told
her: All right, [here it is], build a fire at once! So the old woman accordingly
built a fire. So then from that time they possessed the fire. A short time after
60 that the little rabbit spoke to the old woman [and] said to her: Please make a
sweating-lodge and heat stones.[32] So (truly) the old woman did. When she had
finished the sweating-lodge the little rabbit went in. After some time he spoke
to her from within the sweating-lodge [and] said: It is enough, uncover me!
And when she uncovered the rabbit who was sitting there he was very big.
65   Once he [Nenabozo] spoke to her [the old woman] again [and] said:
[Make a sweating-lodge] again please. And when she uncovered him (again)
after he had been sweating again, lo! there was sitting a boy. The old woman
was very proud of it and went and made a little bow [and arrows] for him. So
the boy was [always] wandering about, shooting arrows and frequently brought
70 little birds [home]. Once the boy said to her [the old woman] again: Make a
sweating-lodge again, please. And again he told her: Uncover me, please. And
when she uncovered him a tall man was sitting there. And now that man related
what had happened to them [him and his brothers] when they were going to be
born and who they were and also how their mother came to die, that it was the
75 North who killed her because he was nothing but flint. And also at this time the
man named himself [and] his name was Nenabozo. And now Nenabozo began
to interrogate his grandmother: Who is my father [, he said,] and who is my
mother and where is she?[33] But the old woman did not want to tell him. But
Nenabozo did not stop talking till at last his grandmother told him what had
80 happened to their mother that they had killed her when they were born and that
it was probably especially the North who killed their mother. When Nenabozo

heard that his mother had been killed he got angry. So presently he went away
to look for his brother [the North]. When he was getting near the place where
his brother was he heard him chopping at a distance. When he [Nenabozo] got
85 sight of him, lo! he [North] was standing thus [here the narrator showed how he
was standing] and it was his shinbone he was hewing at [and] although he was
chipping pieces off it, it was always keeping the same size. This is the work he
was always occupied with. When he [Nenabozo] came to him, they shook
hands [and] were very glad [to see each other]. When it was evening he [Nena-
90 bozo] went along with him to his [North's] home. And then they were sitting
together, as if visiting each other, and during the night they did not sleep. At
last he [Nenabozo] asked his brother: What will kill you, brother? [His brother]
rather suspected him and did not want to tell him but he [Nenabozo] did not
leave off till finally he [his brother] told him and said: Small stones, that is
95 what will kill me. And Flint [North] also asked Nenabozo: And what will kill
you, brother? And Nenabozo answered: If I were repeatedly hit by an arrow
with cedarbark for a point, it would kill me. Then they went to sleep. While his
brother was sleeping Nenabozo went secretly out, gathered small stones and
piled them up close by his [brother's] home. Then he went in [again]. And
100 when the day broke Nenabozo suddenly jumped up and said to his brother, at
the same time giving a war-cry: Brother! they are attacking us. Then he jumped
out repeatedly shouting war-cries ayi! ayi! ayi! And then the [other] one
jumped out too and the moment he jumped out Nenabozo struck him with a
stone [struck him, used a stone] and when he struck him a little piece of Flint
105 was chopped off. And [Flint] said to him: Heéeehé brother! you mistake me for
an enemy! Why do you cry heéeehé [said Nenabozo], they are of all kinds [he
means: even people who are related to each other] who are fighting! Then (also)
Flint took a piece of cedarbark and put it in his arrow as a point and shot Nena-
bozo [with it]. But he did not hurt him at all. And they were fighting the whole
110 day. At last, when it was nearly sunset, Nenabozo had chopped him to pieces
[and so] he killed him. And when he had killed him he said: How would the
human beings have been able to increase in the long run if this [state of things]
existed [he means: if a dangerous being like Flint were allowed to live on].
Then he marched off and went home. And when he got home he told his grand-
115 mother that he had killed his brother Flint.

Period Two

Now and then when Nenabozo was walking about in the neighbourhood of
their home he saw that the cuts in some of the stumps looked strong [as if done
by a strong hand] and some looked weak. Then he asked his grandmother who
had made those cuts that looked strong. Then his grandmother cried because he
120 asked her so and the old woman told Nenabozo that the one [[viz. who had
made those cuts], her husband, had been killed by a supernatural being who
lives in the water [and] whose name is Whale. Then he prepared to make a
canoe and sharpened his axe and the sharpening sounded like this: Kos kos kos,
kigá kigá kigá [means: your father (thrice), your mother (thrice)]. Then he
125 repeatedly struck his axe with a stone saying (at the same time): I hate him
exceedingly because he says it on purpose to make me sad. Then he com-
menced to make a canoe and after he finished it he said to his grandmother:

To-morrow I am going to look for him who killed our late father. Then he
loaded many stones in his canoe and embarked.[34] And when he came far on the
130 lake he got up and sang (and he sang) this: Hullo! Whale! come, try to swallow
me, you who killed my father! And the whale heard what Nenabozo was sing-
ing [lit. heard Nenabozo how he sings singing]. And the whale was told by his
father: do not pay attention to his talking, that Nenabozo has supernatural
power. And the whale said to his threshold, which is a big pickerel: you go and
135 swallow Nenabozo. So accordingly the big pickerel went. And Nenabozo
really saw the water whirl round [and] looking in that direction he saw the big
pickerel come with open mouth. Then he threw a big stone at him and the big
pickerel was almost killed. Then he [the pickerel] went away. When he came to
his master Whale he said to him: Impossible! Then he died. Now the whale got
140 angry. Well, now I shall go and swallow him [myself] said the whale. Do not!
my son! that Nenabozo is a supernatural being indeed! the whale was told by
his father. But nevertheless he went. So Nenabozo again saw the water whirl
round and there he saw him: Ah! a great big one indeed! And then he was swal-
lowed [canoe and all]. Then the whale went home again. When Nenabozo came
145 to his senses again he saw a squirrel sitting there and said to him: Youngest
brother![35] how did you too come here? [lit. from where is he and also you that
you are here]. And he [the squirrel] answered him: While I was swimming he
swallowed him too. So there they were. While being there Nenabozo saw
something hang that was moving and he asked the squirrel: What is that? And
150 the squirrel answered: I do not know what it is. (And) there in his canoe
Nenabozo's knife was struck between the ribs and the bark [lit. was stuck
between there at the rib]. He took his broken knife and cut off a little slice from
[the thing] that was hanging [there]. Then the whale made this sound:hhh! and
said! Ah! I feel very bad indeed! Then his father said to him: I told you all
155 along that he has got supernatural power, this Nenabozo. Of course Nenabozo
and the squirrel were listening to them while they were talking outside. Then
the whale swallowed lots of water [and said]: I had better throw him up! Now
the whale vomited. So they were drawn towards [his gullet]. But Nenabozo
threw his canoe crossways and then they clung to it. Oh! impossible! said the
160 whale. Yes, yes! I told you all along! his father said to him. Now they [Nena-
bozo and the squirrel] knew exactly [what] it [was] that was hanging [there].[36]
Then Nenabozo took his knife and cut it to pieces. So the whale died. At a cer-
tain moment (being within) they noticed being tossed in a certain direction. So
they thought: what is the matter! And Nenabozo got up and cut him open,
165 (there) right above his [Nenabozo's] head and, pulling the skin down, saw the
sky: My younger brother, now we shall be saved [he said]. Then they got out.
And he told the squirrel: Come, go home! and he himself too went home and
told his grandmother to make lots of oil from the whale whom he had killed.
And after it was finished he loaded it in his canoe and embarked.[37] As he was
170 going on it happened that his canoe did not move [any more] the passage being
barred by pitch that was floating on the water [lit. there was the pitch lying
across]. Then he first greased his canoe. After this it moved again. Three times
he was stopped by the pitch [lit, three times the pitch was lying across]. Then
he came to his brother. Then they sat talking together. Nenabozo said to him:
175 What would kill you brother? Nothing [he answered]. No, brother! For every-

body there is something that would kill him. Of course it was with reason that he did not want to tell him, of course he was a little afraid of him [and] for that reason he did not tell him. And what would kill you, brother? Nenabozo was told. Cat's tails will kill me [he answered]. Then they went to sleep. And in the
180 morning he [Nenabozo] attacked his brother fiercely, shouting . . . a noise like this, that is how the war-cry sounds. Now they began to fight. All day long Nenabozo was shooting arrows at him. And the other one (too) for his part was hitting him with cat's tails. But they did not hurt each other at all. When it was very near sunset Nenabozo had only three arrows left. Then a woodpecker flew
185 by and said, in passing: Probably Nenabozo thinks: I ought to kill him. [And then he said to Nenabozo:] If you only hit him where his hair was tied together then he would die. Then Nenabozo shot him near the spot where his hair was tied together.[38] And he [his brother] staggered. Then Nenabozo, shooting again just touched him [there]. Then [his brother] fell down and after getting up fell
190 down again and kept doing so [and he cried]: What are you doing, Nenabozo; it seems that you want to shoot me just there! Whenever there is a fight, the bullets are flying everywhere [Nenabozo answered]. Nenabozo had only one arrow left. So he carefully shot at him again [aiming at the spot] where his hair was tied together. And he hit him [there] and so he killed him. Then he told his
195 grandmother that he had killed his brother and so had killed every one who might have more supernatural power than he [Nenabozo]. So (then) there was nobody left who would be able to kill Nenabozo.[39]

Period Three

Walking about Nenabozo saw wolves running. Then he shouted to them [lit. he said to them shouting]: Stop! wait for me! So (truly) the wolves waited for him.
200 When he arrived he said to them: Where are you going? And those wolves answered: We are hunting. And Nenabozo said to them: Please, let me go along with you [lit. I shall go along with you}. And they answered him: You would not be able to keep up with us. And he told them: Please, make me look the same as you look. And they answered him: We could not do that; but Nenabozo
205 did not desist before he was transformed (in that way). Then they [the wolves and Nenabozo together] went on. By the time it was getting towards spring the old he-wolf [lit. old man wolf] said to him: Now we have to part with you but I shall leave this one of your nephew's [lit. this one your nephew] with you who is a skillful hunter. Then Nenabozo was satisfied. During the time Nenabozo
210 and his nephew were living there it was about getting towards summer. His nephew was a formidable hunter indeed. Once, while sleeping, Nenabozo dreamt that his nephew was taken away by supernatural beings.[40] Then he cried in his sleep, making a noise like this. . . . Though his nephew tried to shake him awake he could not wake him up till after a long while. I wish you would never
215 jump across anything like a stream [lit. please, never jump across anywhere if it is like a stream] [Nenabozo told his nephew] but after throwing little sticks [on it] [lit. first throw little sticks].[41] Not until then you may jump across but be sure to do it first even when it hardly looks like a stream. Shortly afterwards [the wolf] chased after deer. When he was about to strike [lit. to reach him with
220 his mouth] he saw there something looking like a stream. Come, never mind! he thought, I am about to reach him, anyway. Then he jumped to cross it [lit.

he jumped to jump across] [but] right in the middle of the river he fell. So then
he was taken. Nenabozo followed the tracks of his nephew after he [his
nephew] had stayed away over night. So he tracked him as far as the water.
225 Then he cried again and went about everywhere crying, in the wilderness. He
did not go home. And somewhere he saw a kingfisher sitting in the water and
looking steadily [at something]. Then, as he came near and tried to catch him,
he missed him and he said (to him): I abhorred him, this one! What is this he is
looking at? The reason that the kingfisher's feathers are standing straight up is
230 that he [Nenabozo] had got hold of him [for a moment]. Oh! [it is] Nenabozo!
[the kingfisher said] I was going to tell him [something]. All right! my younger
brother, tell it to me [said Nenabozo]. In exchange I shall make you (so that you
are) most beautiful. I am looking at your nephew, who is being eaten, the
kingfisher said, this is why I am looking. I shall teach you this: when it is a
235 warm day these supernatural beings leave the water [and then] the chief is
usually lying there in the middle, that is the one who took him. Then he went
away. Nenabozo transformed himself into a stump [on the spot] where they [the
supernatural beings] usually left the water. Very old looked that stump [lit. it
looks very old that stump that is what it looked]. Presently, as it was getting
240 warm, the water was really whirling round. And immediately afterwards big
snakes began to crawl out and also bears and all kinds of water-animals [lit. all
kinds that live in the water]. And presently he also, the one who had taken him
[the wolf] appeared at the surface, far away in the water, as he was afraid to
come ashore. Verily, he was beautiful, he looked like snow. It looked strange to
245 them, that stump that was standing there and, therefore, he was a little suspi-
cious: Nenabozo has all kinds of tricks, this is not his real shape [he thought]. I
used to see it formerly, [some of them] said and others: I never saw it. Please,
Big Snake! go and press it! Good gracious! thought Nenabozo. Then he [the
snake] wound his body several times around the stump and pulled himself
250 together. Nenabozo was just about to yell [with pain] when he loosened his
embrace. It would be too much for Nenabozo to be the stump [they said]. You,
bear! please go and scratch it, the bear was told. Then the bear walked up to
[him]. Good gracious! [Nenabozo] thought. And then he scratched it. When he
was about to make him [Nenabozo] squeal he let him alone. Nenabozo would
255 not stand it, they said. I used to see it formerly, some [of them] said. Then
finally the chief left the water. Where they were lying, sunning themselves, he
lay down right in the centre. I wish they would be sound asleep, thought Nena-
bozo. [They were.] Then he went stepping over those big snakes. And then he
shot the chief with an arrow under his arm. Ah! Nenabozo kills the chief. Now
260 he roamed about. And then he made (there) a big raft in anticipation. Now he
heard somebody coming singing. He went [to look]. Why! that old frog-woman
with lots of bass-bark on her back.[42] What is your usual occupation, grand-
mother? Nenabozo has shot the chief with an arrow [and] I am called upon for
help, I am the one who will doctor him, she answered. What do you sing when
265 you are doctoring, grandmother? Grandchild! you might be Nenabozo! Nena-
bozo will do you all kinds of harm if he sees you. He is angry because his
nephew was taken away. Now she commenced to teach him how she usually
sang: All over the world I am walking rattling, I am walking rattling, thus I
sing, [and further:] I am slowly drawing out by magic the arrow of my grand-

270 child Nenabozo. Then he [Nenabozo] struck her dead. Then he skinned her
     neatly, put her skin on his own body [li. then he put it on], and loaded that
     bass-bark she had been carrying on his back. Now he went, singing as he went
     on. Of course they heard him from yonder [where the supernatural beings
     were]. And he was met by [some] children, [boys and] mixed up with them,
275 girls. Take me to the one I am going to doctor, grandchildren! my eyes are
     swollen with crying. Some of the boys said to him: Onabozo: they knew him a
     little. I shall stay here alone to doctor him, grandchildren! There his nephew's
     skin was covering the door. He puckered his lips as if to kiss him.[43] Then he
     mutilated him [the snake] internally with the arrow. That would kill him. Then
280 he ran away and he also tore his nephew's skin off [from the wall] and he
     unravelled the sewing of that frogskin. Ah! Nenabozo! [he is recognized now
     that he drops his disguise]. So he went and finished the chief. Now he went run-
     ning to his raft. And just behind him the water flowed, flowing all over the
     world till they could not see the tops of the trees [lit. till the trees did not show
285 their tops]. Then all kinds [of animals] came swimming towards him. Those
     fur-animals, muskrats, beavers, otters, loons. All those who can stand long div-
     ing and also all different kinds of fur-animals. Now he breathed on his
     nephew's skin [lit. on his nephew]. Thus he brought him back to life and he
     [his nephew] looked just the same as before. Come! my younger brothers! fetch
290 some earth down there under the water, whoever will be able to do it. So then
     the beaver dived first. He did not quite reach the earth. Then he was drowned.
     Afterwards he appeared on the surface of the water. Then he [Nenabozo] made
     him alive by breathing on him, opened his hands and looked for earth. Of
     course there was nothing. Then (again) the otter tried to dive but he fared like
295 the beaver. Then the loon tried to dive but he too fared like the beaver. Then, as
     the last one, the muskrat was waving his tail and going noisily about and swim-
     ming around. Finally his tail slowly disappeared. Then he was gone. Now he
     saw the greenish looking bottom. When he was about to be drowned he reached
     the bottom and just when he was grabbing it he was drowned. When he came to
300 the surface of the water Nenabozo opened his hands. Truly he had a little earth
     in his hand. Then he spread the earth out. While drying it ever grew. When that
     earth had grown big he [Nenabozo] said to his nephew: Please, run round the
     earth. Only a little while he was gone. And he [Nenabozo] said: It would be too
     small [if I left it like this]. After a while [he said] again: Well! again please! So
305 the wolf went again. And he did not come back: he grew old and died before he
     could arrive; he went for ever. So now Nenabozo went roaming about every-
     where.[44]

Acknowledgments

Notes

1. See Messer (1982:309-311) for a review of previous attempts to explain the trickster-hero paradox.
2. The latter procedure is best exemplified in Lévi-Strauss' *Mythologiques*, I-IV (cf. Leach 1970:67).
3. Cf. the works of Alan Dundes and Vladimir Propp on folk tale morphology.
4. See Ritzenthaler (1970:27-28) on pregnancy prescriptions: "... a child to be born of woman is preceded by its soul sent by the manitou; it enters its mother's womb. Without this, conception and birth are impossible. ..."
5. Cf. Chevalier (1979:155) on the logic of mythic periodization.
6. Lévi-Strauss (1963:229). See also Lévi-Strauss (1969b:199) on the notion of "message" and its relation to "codes."
7. In Barnouw (1977:77) the enemy across the water is referred to as "chopping-his-shins-with-an axe."
8. (Cf. Coleman et al. 1971:65.) "We [the authors] heard that later Nanabozho set out to find Flint, and Flint was expecting him. One narrator said, 'The youngest brother was sharp like a razor. He lived on an island, where he watched for Nanabozho. He was afraid of Nanabozho and he knew that he was coming, so he gathered pine pitch and put it in the water all around the island.' Here the powerful man [enemy across the waters] is identified as a brother of Nanabozho."
9. See Danzinger (1978:16) on the theme of revenge.
10. The Ojibwa practised patrilineal descent, preferring marriage with bilateral cross-cousins. Residence patterns were bilocal and neolocal. See Cooper (1936:4) and Danzinger (1978:10-11).
11. Landes (1937a:76). Among the sources collected for the Ojibwa of Minnesota, two refer to the healer of the manidos as an old woman and two as a frog-woman (two do not mention her at all). Among the four sources collected from the Wisconsin Ojibwa, three mention an old woman (one does not discuss her). For the Northern Ojibwa, one source mentions a toad and the other a toad-woman. In Ontario, one source mentions a serpent-woman, four an old woman, two a frog, and one an old woman who later changes into a frog. An additional four sources for the Ojibwa (which are of unspecified location) refer to an old woman (1), a toad (1) and an old woman who changes into a toad (1). (One source does not mention her at all.) (See here Messer [1983] for details on the various accounts of the myth.)
12. (Cf. Long 1904:115.) Referring to the Ojibwa he comments: "Is it then surprising that every action of their lives should tend to satisfy their thirst for revenging offenses committed against them, and that these sentiments should operate so powerfully in directing their future conduct?"
13. See Landes (1938:51) and Barnouw (1950:16). Barnouw quoting Margaret Mead notes: "Their [the Ojibwa's] highly individualistic way of life is completely congruent with the sparse distribution of game animals which makes it necessary for men to scatter widely for several months of the year." (Cf. Kohl 1860:327.)
14. On twin births see Hultkrantz (1979:38); Hilger (1951:30); Lévi-Strauss (1978:31-32). Note also Appendix 1 (de Jong), line 74, where the plural form Nanabozho and his "brothers" is used.
15. See Hilger (1951:4): "... it was believed that a child born with certain physical traits was not conceived in the normal way: it was considered reincarnated. Such traits were those of being born a twin. ..."
16. See Jenness (1935:29 cf. Coleman et al. 1971:57-58). See Ritzenthaler (1970:27; cf. Hilger 1951:30-31) and the versions of Schoolcraft (1839, 1969, 1971), Speck (1915), Radin (1914), Barnouw (1977), Jones (1917) and Reagan (1919).

17. See Coleman et al. (1971:56-57). De Jong (Appendix 1), lines 121-123, refers to the large fish as a "supernatural being."

18. Although de Jong's account does not describe Nanabozho's scalping his enemy, this occurs in the renditions provided by Friedl (in Barnouw 1977), Jones (1917), Michelson (1911), Reagan (1919) and Schoolcraft (1839, 1969, 1971).

19. Barnouw (1950:25): "Miscalculation of a person's strength is a common theme in the folklore. One simply never knows who is powerful and who is not, so it is better to be on the safe side and act politely to everyone. External qualities are not always adequate indications of a man's supernatural resources, and a man may not even know how much power he has himself." Cf. Densmore (1973:77-78) on the kingfisher.

20. Hallowell (1960:35): "The world of myth is not categorically distinct from the world as experienced by human beings in everyday life. In the latter, as well as the former, no sharp lines can be drawn dividing living beings of the animate class because metamorphosis is possible. In outward manifestation neither animal nor human characteristics define categorical differences in the core of being."

21. Muskrat's being revived is not specified in de Jong's account, but is found in the versions collected by Blackbird (1887), Barnouw (1977), Blackwood (1929), Reagan (1919) (three versions), Kinietz (1947), Jenness (1956), Ritzenthaler (1970), Jones (Rev. P.) (1861), Laidlaw (1915-22), Coleman et al. (1971), Ellis (1888) and Hindley (1885).

22. Cf. Hultkrantz (1979:38; 38, n. 26): ". . . the twins may be perceived as representatives of a cleft in the composite nature of the culture hero, or personifications of his two tendencies, one productive and the other destructive."

23. Figure 3 is modelled after Lévi-Strauss (1963:224).

24. Cf. Schoolcraft (1971) and his account of Nanabozho's fight with the west wind.

25. Landes (1937b:102): "Ojibwa life may be thought of as resting on three orders of hostility. All Ojibwa speaking persons feel a major hostility towards those of alien speech, epitomized by the Dakota Sioux. Next in order is the hostility that exists between different local groups of Ojibwa, and the third is the hostility felt by any household toward another, whether or not of the same village." Cf. Landes (1938:178): "The keystone of their culture which molds all personal actions and reshapes the cultural details that have been borrowed from neighbouring tribes, is individualism."

26. Cf. Barnouw (1955:349): "This restless and rootless spirit is characteristic of the narrative. A contrast may be noted with the origin legends of some sedentary societies (such as the Hopi) which change the point of origin of the human race to a specific locality. . . ."

27. Cf. Kohl (1860:392), Nanobozho speaking (he has just killed his son): "These are times of war. For the following centuries the same will constantly happen in wars and revolutions. Husband and wife will quarrel. Brother will kill his brother, and the father his son. And even worse things than this will happen. Such is the harsh destiny of man!" Cf. also Lévi-Strauss (1988:171).

28. Cf. Hilger (1951:30-31).

29. See here Ritzenthaler (1970:26-27) on the structure of the birth hut.

30. See here Densmore (1929:76): "A Canadian Chippewa said that when a death occurred they often buried the body inside the wigwam. He said that if a burial were to be outside a tipi they took down the poles and threw them aside. These poles were never used again." See also Ritzenthaler (1970:26-27).

31. Cf. Jones (1917:467).

32. See here Ritzenthaler (1970:108-109) and Densmore (1929:94-95) on the sweat lodge.

33. De Jong (1913:12, n. 4) comments: "Probably the narrator made a mistake here: Nenabozo either does not know anything about it and interrogates his grandmother or is well informed so that he need not ask her. However, there still remains a third possibility: it would not be unlikely to Nenabozo to tell something himself first and have it afterwards

related to himself by the very person to whom he had been talking; this person may have forgotten that he (Nenabozo) knew before being told (and it is just like N.'s stupidity to believe this) and then his sudden emotion will be more justified."

34. See here Densmore (1929:135): "In loading . . . a canoe the bottom was first loaded heavily. . . ."
35. See here Landes (1937a:9) on the kinship designation 'brother.'
36. This is the whale's heart. See Jenness (1935:18) where the author claims that the "soul" is located in the heart.
37. See here Densmore (1929:149) on the method of making pitch.
38. See here Densmore (1929:38) on Ojibwa attitudes toward hair.
39. See here Landes (1937a:87) on the theme of individualism.
40. See here Densmore (1929:78-83) on the significance of dreams.
41. The allusion here is to the passage of the dead to the land in the west. See Barnouw (1977:136, 228-231). See also Jenness (1956:19-22).
42. See Densmore (1929:152-153) on the uses of basswood fibre.
43. See Densmore (1929:46) on the role of the "sucking doctor" or "djasakid."
44. De Jong (1913:5-16). Nanabozho's peregrinations at the end of the story are typical of the Ojibwa's semi-nomadic lifestyle.

References Cited

Alexander, Hartley B.
    1916   North American Mythology, Vol. 10. Boston: Marshall Jones.
Baraga, Bishop
    1966   A Dictionary of Otchipwe Language. Minneapolis, Minnesota: Ross and Haines.
Barnouw, Victor
    1950   Acculturation and Personality Among the Wisconsin Chippewa. Menasha, Wisconsin: American Anthropological Association.
    1955   A Psychological Interpretation of a Chippewa Origin Legend. Journal of American Folklore 68:73-85.
    1977   Wisconsin Chippewa Myths and Tales. Madison: University of Wisconsin Press.
Blackbird, Andrew J.
    1887   History of the Ottawa and Chippewa Indians of Michigan. Ypsilanti, Michigan: Ypsilantian Job Printing House.
Blackwood, Beatrice
    1929   Tales of the Chippewa Indians. Folklore 40:315-344.
Brown, Charles Edward
    1944   Winabozho, Hero God of the Indians of the Northwest. Madison: Wisconsin Folklore Society.
Burridge, Kenelm
    1967   Lévi-Strauss and Myth. In The Structural Study of Myth and Totemism, edited by E. Leach, pp. 91-115. London: Tavistock Publications.
Campbell, Brad
    1974   A Structural Analysis of the Myth of Asiwa. Unpublished M.A. Thesis, Carleton University, Ottawa.
Chevalier, Jacques
    1979   Myth and Ideology in "Traditional" French Canada: Dollard, the Martyred Warrior. Anthropologica 21(2):143-175.

Coatsworth, David, and Emerson Coatsworth
    1979   The Adventures of Nanabush: Ojibwa Indian Stories. Toronto: Double-
            day Canada.
Coleman, Sister Bernard, Estelle Eich and Ellen Frogner
    1971   Ojibwa Myths and Legends. Minneapolis: Ross and Haines.
Cooper, John
    1936   Notes on the Ethnology of the Otchopwe of the Lake of the Woods and
            Rainy Lake. Washington, D.C.: Catholic University of America.
Danzinger, Edmund J.
    1978   The Chippewas of Lake Superior. Norman, Oklahoma: University of
            Oklahoma Press.
Densmore, Francis
    1929   Chippewa Customs. Smithsonian Institution, Bureau of American Eth-
            nology, Bulletin No. 86. Washington, D.C.: Government Printing Office.
    1973   Chippewa Music. Minneapolis: Ross and Haines.
Dewdney, Selwyn
    1975   The Sacred Scrolls of the Southern Ojibwa. Toronto: University of
            Toronto Press.
Dunning, R.W.
    1959   Social and Economic Change Among the Northern Ojibwa. Toronto:
            University of Toronto Press.
Ellis, William
    1888   The Story of Nana-bo-zhoo and His Brother. The Varsity 9:55-57.
Fisher, Margaret
    1946   The Mythology of the Northern and Northeastern Algonkians in Refer-
            ence to Algonkian Mythology as as Whole. *In* Man in Northeastern
            North America, edited by F. Johnson, pp. 226-262. Massachusetts: Phi-
            lipps Academy.
Hallowell, A. Irving
    1955   Culture and Experience. Philadelphia: University of Pennsylvania Press.
    1960   Ojibwa Ontology and World View. *In* Culture and History, edited by S.
            Diamond, pp. 19-52. New York: Columbia University Press.
Hewitt, J.N.B.
    1910   Nanabozho. *In* Handbook of American Indians North of Mexico, Vol. 2,
            edited by F. W. Hodge, pp. 18-23. Smithsonian Institution, Bureau of
            American Ethnology, Bulletin No. 30. Washington, D.C.: Government
            Printing Bureau.
Hilger, M. Inez
    1951   Chippewa Child Life and Its Cultural Background. Smithsonian Institu-
            tion, Bureau of American Ethnology, Bulletin No. 146. Washington,
            D.C.: Government Printing Bureau.
Hindley, John Ingham
    1885   Indian Legends: Nanabush, the Ojibbeway Savior and Moosh-Kuh-Ung
            or the Flood. Barrie, Ontario: N.p.
Hoffman, Walter
    1891   The Midewiwin or Grand Medicine Society of the Ojibwa. Annual
            Report of the Bureau of American Ethnology, No. 7. Washington, D.C.:
            Government Printing Office.

Hultkrantz, Åke
    1979   The Religions of the American Indians. Berkeley: University of Califor-
            nia Press.
Jenness, Diamond
    1935   The Ojibwa Indians of Parry Island: Their Social and Religious Life.
            Ottawa: J.O. Patenaude, I.S.O.
    1956   The Corn Goddess. Ottawa: National Museum of Canada.
Jones, Reverend Peter
    1861   History of the Ojebway Indians. Freeport, New York: Books for Libraries
            Press.
Jones, William
    1916   Ojibwa Tales from the North Shore of Lake Superior. Journal of Ameri-
            can Folklore 29:368-391.
    1917   Ojibwa Texts, Part 1. Leyden: E.J. Brill.
    1919   Ojibwa Texts, Part 2. New York: G.E. Stechert.
Josselin De Jong, J.P.B. de
    1913   Original Odzibwe Texts. Leipzig and Berlin: B.G. Teubner.
Judd, Mary
    1901   Wigwam Stories. Boston: Athenaeum Press.
Kinietz, Vernon
    1947   Chippewa Village: The Story of Katikitegon. Cranbrook Institute of Sci-
            ence, Bulletin No. 25. Bloomfield Hills, Michigan.
Kirk, G.S.
    1970   Myth: Its Meaning and Function in Ancient and Other Cultures. Berke-
            ley: University of California Press.
Kohl, J.G.
    1860   Kitchi-Gami: Wanderings Round Lake Superior. London: Chapman and
            Hall.
Laidlaw, George
    1915   Ojibwa Myths and Tales. Ontario Archaeological Report, pp. 71-90.
    1916   Ojibwa Myths and Tales. Ontario Archaeological Report, pp. 84-92.
    1918   Ojibwa Myths and Tales. Ontario Archaeological Report, pp. 74-110.
    1921-22 Ojibwa Myths and Tales. Ontario Archaeological Report, pp. 84-99.
Landes, Ruth
    1937a   Ojibwa Sociology. New York: Columbia University Press.
    1937b   The Ojibwa in Canada. In Co-operation and Competition Among Primi-
            tive People, edited by Margaret Mead, pp. 87-126. New York: McGraw-
            Hill.
    1938   The Ojibwa Woman. New York: Columbia University Press.
Leach, Edmund
    1970   Lévi-Strauss. London: Fontana.
Leekley, Thomas, B.
    1965   The World of Manabozho: Tales of the Chippewa Indians. New York:
            Vanguard Press.
Lévi-Strauss, Claude
    1963   Structural Anthropology, Vol. 1. New York: Basic Books.
    1966   The Savage Mind. London: Weidenfeld and Nicholson.
    1969a   The Elementary Structures of Kinship. Boston: Beacon Press.

1969b   The Raw and the Cooked. New York: Harper & Row.
1976   Structural Anthropology, Vol. 2. New York: Basic Books.
1978   Myth and Meaning. Toronto: University of Toronto Press.
1988   The Jealous Potter. Chicago: University of Chicago Press.
Long, John
1904   Early Western Travels, 1748-1846, Vol. 2. Cleveland: Arthur H. Clark.
Maybury-Lewis, David
1970   Science by Association. *In* Claude Lévi-Strauss: The Anthropologist as
        Hero, edited by E. Nelson Hayes and Tanya Hayes, pp. 133-139. Cam-
        bridge, Massachusetts: M.I.T. Press.
Messer, Ron
1982   A Jungian Interpretation of the Relationship of Culture Hero and Trick-
        ster Figure Within Chippewa Mythology. Studies in Religion/Sciences
        Religieuses 11:309-320.
1983   Nanabozho: History and Mythology. Bulletin of Bibliography 40:242-
        251.
Michelson, Truman
1911   Ojibwa Tales. Journal of American Folklore 24:249-250.
Prattis, Iain
1978   Man and Metaphor: An Exploration in Entropy and Coherence. Unpub-
        lished Departmental Working Paper, Carleton University.
Radin, Paul
1914   Some Myths and Tales of the Ojibwa of Southeastern Ontario. Canada
        Department of Mines Geological Survey, Memoir No. 48, Anthropologi-
        cal Series No. 2. Ottawa: Government Printing Bureau.
1956   The Trickster. New York: Philosophical Library.
Radin, Paul, and Albert Reagan
1928   Ojibwa Myths and Tales. Journal of American Folklore 41:61-146.
Reagan, Albert
1919   The Flood Myth of the Chippewas. Proceedings of the Indiana Academy
        of Sciences, pp. 347-352.
Ricketts, Mac Linscott
1964   The Structure and Religious Significance of the Trickster-Transformer
        Culture Hero in the Mythology of the North American Indians. Ph.D.
        Dissertation, University of Chicago, Chicago, Illinois.
1966   The North American Indian Trickster. History of Religions 5:327-350.
Ritzenthaler, Robert
1970   The Woodland Indians of the Western Great Lakes. Garden City, New
        York: Natural History Press.
Rossi, Ino
1974   Structuralism as Scientific Method. *In* The Unconscious in Culture,
        edited by I. Rossi, pp. 60-106. New York: E.P. Dutton.
Schoolcraft, Henry Rowe
1839   Algic Researches, Compromising Enquiries Respecting the Mental Char-
        acteristics of the North American Indians. New York: Harper and
        Brothers.
1969   History, Conditions, and Prospects of the Indian Tribes of the United
        States, Vol. 1. New York: Paladin Press.

1971   The Myth of Hiawatha. New York: Kraus Reprint Co.

Skinner, Alanson

1912   Notes on the Eastern Cree and Northern Saulteaux. Anthropological Papers of the American Museum of Natural History, Vol. 9, Part 1.

1913   Social Life and Ceremonial Bundles of the Menomini Indians. Anthropological Papers of the American Museum of Natural History, No. 13.

1919   Plains Ojibwa Tales. Journal of American Folklore 32:280-305.

Speck, Frank G.

1915   Myths and Folklore of the Temagami Ojibwa. Canadian Geological Survey, Memoir No. 71. Ottawa: Government Printing Bureau.

Wilson, Reverend E.F.

1886   Missionary Works Among the Ojebway Indians. London: Society for Promoting Christian Knowledge.

INTERVIEW WITH ALEC LEIGHTON

Jerome Barkow
Dalhousie University

Abstract: Anthropology and psychiatry have long provoked and stimulated one another, thanks to the efforts of individuals working in the overlap between them. Alexander Hamilton Leighton is one such figure, a researcher who has been not so much a bridge between disciplines as a winch, drawing the two fields closer to one another despite resistance.

Leighton is currently Professor of Psychiatry and Professor of Community Health and Epidemiology at Dalhousie University in Halifax, Nova Scotia, Canada. He is also Professor Emeritus of Social Psychiatry at Harvard University's School of Public Health. He is a man in motion, rotating regularly between Halifax, Boston (his wife, Jane Murphy, is Associate Professor of Anthropology at Harvard University), and his home in southwestern Nova Scotia.

Leighton was born on July 17, 1908, in Philadelphia, Pennsylvania. He received his B.A. from Princeton University in 1932, an M.A. from Cambridge in 1934, and his M.D. from Johns Hopkins in 1936. His research and teaching interests have ranged widely (a list of his publications follows this interview), but anthropologists will associate his name with the Stirling County study, a project conducted in Canada's Nova Scotia.

Résumé: Depuis longtemps, grace aux efforts d'individus qui travaillent dans des domaines chevauchées, l'anthropologie et la psychiatrie ont provoqué et stimulé l'un l'autre. Alexander Hamilton Leighton fait partie de ce groupe; il est un chercheur qui, plutôt que représentant un lien entre les disciplines, a habilement su rapprocher les deux domaines en dépit de quelque résistance.

A présent, M. Leighton est professeur de Psychiatrie et professeur de Santé Communautaire et d'Epidemologie à l'université Dalhousie de Halifax, en Nouvelle Ecosse au Canada. En plus, il est professeur honoraire de Psychiatrie Sociale à l'école de la Santé Publique de l'université Harvard. Il est un homme actif voyageant entre Halifax, Boston (sa femme Mme. Jane Murphy, est professeur agrégée d'Anthropologie à l'université Harvard), et sa maison au sud-ouest de la Nouvelle Ecosse.

Leighton est né le 17 juillet 1908, à Philadelphie au Pennsylvanie. Il a reçu son B.A. de l'université Princeton en 1932, un M.A. de Cambridge en 1934, et son M.D. de Johns Hopkins en 1936. Ses intérêts de recherche et d'enseignement sont multiples (une liste de ses publica-

tions est ajoutée à cet entrevue), mais les anthropologistes vont surtout associer son nom avec les études de Stirling County, un projet qui a été mené en Nouvelle Ecosse, au Canada.

August 4, 1989

Dr. Barkow: Alec, tell me, how did your special relationship with Canada come about?

Dr. Leighton: Well, it goes back to World War I, when my parents (who lived in Philadelphia, where my father had his business at that time) became frightened by the great polio epidemic in the summer of 1916. They gathered up their children — my sister and myself — and came northeast looking for a place where there was no polio, and that landed them in Nova Scotia. Digby happened to be the first place where they found a house. They were both British in their origins and they were very much attracted to Nova Scotia. They became old-fashioned summer visitors who stayed in the same house all summer long. After the war ended we began alternating, going back and forth across the Atlantic every other year to visit family in Ireland. So it was as a summer visitor that my acquaintance with Nova Scotia began, at the age of 8.

Barkow : Nova Scotia is still getting summer visitors but I am not sure that many of them are contributing as much as you have to the Province. You have long stood for collaboration between anthropology and psychology. Can you tell us about that collaboration during World War II?

Leighton: I was in the Navy then as a psychiatrist, but I had already had some field experience under the tutelage of anthropologists. I had done work with Navajos and Inuit and had become familiar with John Collier and others in the Bureau of Indian Affairs through discussions we had about how to adjust the Indian services to the cultural needs of the people. Due to this previous history, the Department of the Interior got the Navy to lend me to them when Interior took over the administration of a Japanese-American internment camp. They wanted analyses and advice in dealing with the human cultural problems that arose. After a couple of years, I moved into intelligence work under the auspices of the Office of War Information. So I was loaned by the Department of the Interior to the Office of War Information — something like a baseball player being swapped around.

But anyway, I was fortunate in having a very good team of Japanese-Americans as assistants in the Relocation Center. They came with me to Washington to staff our intelligence analysis unit, which was sponsored jointly by the Army, the Navy and the Office of War Information but was administered in the Office of War Information. The job was to supply relevant information on Japanese morale to the people who were conducting psychological warfare and to other people planning strategies relevant to

Japan. So we set up a system and organized an inflow of data both from the Japanese military front and the Japanese home front. From then until the end of the war, we analyzed and reported periodically on what was happening to morale in the Japanese Army and also among civilians in Japan.

Barkow: Who were some of the people in your unit?

Leighton: The basic team were the Japanese Americans. There was Tom Sasaki, who went on to a career in anthropology and was Director of Graduate Studies at the University of Notre Dame when he retired. There was Toshio Yatsushio, who had a career in Southeast Asia largely as an anthropologist for the State Department and is now retired. Then there was Iwao Ishino, who became Professor of Anthropology and spent most of his life at Ohio State University. And there was Scott Matsumoto, who became an epidemiologist and ended his career as Professor of Epidemiology in the University of Hawaii's Department of Public Health. He spent much of his time studying the long-term effects of the bomb at Hiroshima.

They were an unusual group of people and at that time, when they were all in their early twenties, they were extremely alert and effective as data collectors and analysts.

The other people in the team included Clyde Kluckhohn, who was Co-Director of the Unit and there was also Ruth Benedict and Morris Opler and Dorothea Leighton. Those were the main participants.

Barkow: What kind of advice did your unit give the U.S. authorities?

Leighton: I like to think of it as good advice. What we were supposed to do was predict trends in Japanese morale and to identify the factors which seemed to be influencing it upward and downward. Two examples can perhaps illustrate how this operated. The first was the problem of getting Japanese hold-out units to surrender after the war started to go in our favour and we began to take territory. The troops were always confronting these units in Indonesia, Guam and other places. They would hold out to the last man and it was disturbing from a human point of view to have to kill everyone. It was also disturbing militarily and very expensive, because the units were difficult to take and they held up military progress.

So the question was, how do you get the Japanese to surrender? The experts, "the old Japan hands" who had lived years in Japan, and the cultural anthropologists, were inclined to say "You can't. This is the power of Japanese culture, and there is nothing you can do to change it."

The practical military mind, on the other hand, and a good many other people too, tended toward a biological orientation and to say that "the Japanese are just a different kind of animal who is made so he doesn't have fear of death the way we do. There is nothing you can do, you just have to accept it."

The kind of naturalist framework that we had developed was a mixture

of Adolph Meyer's psychobiology and Malinowski's functional anthropology. We postulated a certain range of basic human tendencies with culture affecting the way those tendencies were manifested in actual behaviour, and we doubted very much that any group of people, kamikaze tradition or not, lacked fear of death. To us this did not seem to be in keeping with what we know about evolution and the fundamental truths of animal life, at least among the mammalia anyway. We assumed that fear of death was probably more like a bell-shaped curve, there were people who are very extreme in their ability to resist and in their determination to do so and who believed in the Samurai tradition. There were other people we thought would give up at the drop of a hat if they could, but they were locked into the group of which they were members. Most were between these extremes, we supposed, and could be moved to surrender if we could find something to appeal to them.

Our intelligence data suggested to us that one element in resistance was fear of what would happen to them if they did surrender. They were scared of torture and I may say, unfortunately, not without reason, but this fear was greatly exaggerated of course by their own traditions and by the use of those traditions by their officers and leaders. We had no experimental way of demonstrating that our hypotheses were correct, but fortunately the communists in Northern China, who were of course also fighting the Japanese, had on some occasions managed to take a Japanese prisoner and send him back to talk to those holding out. This seemed to work, so we seized on it as an illustration to bolster our case. In our reports we said that the hold-out situation was being misunderstood, that there was in fact some flexibility among the Japanese and that it would be worth trying to get some Japanese prisoners and send them back to talk to their compatriots through a P.A. system.

At first there was great resistance among the authorities. They were convinced it couldn't be done. Some of the military went and asked the old Japanese hands who spoke the language and were much more impressive than we were. These people were certain it wouldn't work. "You don't understand the Japanese mind," they said. But eventually the military did try it and it worked. They got Japanese prisoners who were GIs like the guys in the fort or cave or whatever, and who talked to them in their language — I mean by that GI to GI, not officer to man or civilian to soldier or other inappropriate crossing of levels. The surrenders began first as a trickle but then became frequent. That is an awfully compacted representation of rather complex propositions and reasoning, but they had practical implications and worked out well.

Barkow: Well that was one piece of advice. What was the other example?

Leighton: Toward the end of the war we became impressed with evidence that Japan wanted out. From about the January or February prior to the

August when they did surrender, the evidence was accumulating. We drew this inference from information we got from inside Japan by way of Switzerland and Sweden. There had been false rumours before this and efforts to fool the West. But from our strategic mapping of all the data we concluded that we were now in touch with the real thing. The political nature of Japan at this time was such that when the Suzuki cabinet was formed it had a mandate to get Japan out of the war with the best bargain possible. That was about May.

Our analysis persuaded us that what was holding up the end of hostilities was the Japanese fear of what the Western powers were going to do to the Emperor. The American feeling was that the Emperor was responsible for the war and its atrocities. He wasn't just a figurehead, it was believed, but was an actual evil force in the East that we had to demolish, just as Hitler and Mussolini had been demolished in Europe. The national policy of targeting Hirohito was very firmly believed in by Roosevelt and other national leaders. It was asserted over and over that we were going to demolish Hirohito, that he would be tried as a war criminal and disposed of accordingly.

It seemed to us that all this was not only an error, but it missed an opportunity. It attributed to Hirohito political powers that in fact he didn't have and grossly misunderstood the symbolic significance that as Emperor he did have and its potential for ending hostilities. The Emperor was one of these symbols that can appeal to all people in the culture, whether you are an old traditionalist or young and not very respectful of old traditions. Here really was a cultural symbol of great power. It was something like élite British feeling about the Crown combined with the much deeper mystical feeling of a Roman Catholic for the Pope. Even that, however, is weak compared to the meaning of the Emperor of Japan. Assaulting him would be humiliation to everybody in Japan.

Of course, at that time we were out to humiliate the Japanese as much as we could, but at the same time we did want the war to end with the least possible loss of life on the part of our own people. Our intelligence analysis unit became convinced that real progress toward ending the war would occur if we dropped our intransigence about the Emperor. We thought the Japanese would agree to everything else because their morale was shot. Support for the Emperor-symbol was about all that was holding it together.

Few would listen. Eventually our boss in OWI, George Taylor, together with the overall Chief, Elmer Davis, went to see Roosevelt about our ideas. They got no place with him, but then after his death they tried again with Harry Truman and the Secretary of War, Henry Lewis Stimson. They got laughed at by both. The Acting Secretary of State, Joseph Grew, who had spent 10 years as Ambassador to Japan, was quite persuaded that Japan wanted to get out of the war and that the attack on the Emperor was a bad

idea. And the Chief of Naval Intelligence, Admiral Ellis Mark Zacharias, who had personal knowledge of Japan, also shared the views that we were advocating. These views were not based on knowledge of living in the country such as these men had. Our views were based on behavioural science concepts applied to data. The more the war went on the more we were persuaded that it was really a serious error in our policy to keep telling the world, and the Japanese in particular, that we were going to hang Hirohito or something of the sort.

Our unit didn't, as it happened, know anything about the atomic bomb that was being prepared. After Hiroshima, the Japanese began to negotiate surrender openly. Our morale analysis thinking was that they would have done it anyway, but the atomic bombs speeded up the process and gave the civilian government of Japan a stronger hand for controlling the militaristic hold-outs.

Nevertheless, when it came down to the final stages of discussing surrender, the dialogue went something like this: The U.S. said, "We won't discuss conditions of surrender — it has to be unconditional." The Japanese asked, "What are you going to do about the Emperor?" Then instead of saying "none of your business," the U.S. Government finally said that we had no intention of harming him, that it was Japan's military and political leaders whom we would hold responsible.

Now whether our team plus Grew plus Zacharias by that time had begun to have some influence, I don't know. But in the end the U.S. did come up with the right answer. Naturally, we felt somewhat vindicated in our conclusions when told that the only question asked by the Japanese Government in the last phase of discussing surrender was about the Emperor.

Barkow: Well, we know that Japan since then has gone from defeat to becoming the world's economic super-power. Was there anything you learned back then that might have permitted you to predict the current Japanese domination of so many industries?

Leighton: I wish I could say we were that foresightful but I don't think it ever entered our thinking.

Barkow: Alec, can you tell us about your own particular role in the unit?

Leighton: The focus was on morale. That involved developing a concept of morale and indicators for telling how the morale was changing up or down. The model for that was developed in the Japanese internment camp study. We were trying to follow weekly changes in morale of a population of about 10 000 people. We established indicators and were able to check out their predictive power with regard to strikes and other disturbances in the camp. When we moved to Washington, we retained the principles but reworked the model so it would be suitable for Japanese military and Japanese home front

morale. The indicators had to be redone to be in keeping with the data we could get hold of. The anthropologists added to the team contributed from their experience in interpreting the meaning of what people did and said in terms of their culture. They operated as generalists concerning how culture worked, rather than as experts on Japanese culture per se. I think this freed them somewhat from conventional biases.

Part of my responsibility — and I wasn't very good at it — was to get the facts and interpretations that we generated to reach as far up in the decision-making process of the government as possible. Our real strength lay with George Taylor, who at that time was Director of the Far Eastern Division of the Office of War Information. He was convinced of the value of our way of working. He helped greatly in getting our messages to people.

Barkow: Let's move on to discuss the study that I believe most anthropologists think of when we hear your name. The "Stirling County Study" was a landmark both for anthropology and for psychiatric epidemiology. Can you tell us how you came to conduct such a project?

Leighton: One never knows what one's basic motivating factors are, I suppose, but it was something like this: As a resident in training in psychiatry, I got impressed by the fact that unlike most other branches of medicine, psychiatry is almost entirely based on pathological phenomena. The focus is, of course, on behaviour, but it only studies pathological behaviour. In the rest of medicine, you have physiology, the study of normal functioning, to set against clinical pathology and post mortems and so on. Psychiatry lacked this comparative base. Its theories of normal functioning were derived from studies of the abnormal.

I am not saying that there were no studies of normal people. Psychology, especially with children, has done work of that kind. But it wasn't in the same framework as clinical psychiatry and there was not much cross-over in thinking. I became bothered by this, and also curious as to what one would learn if one were to make a systematic study of normal people by employing the same kind of techniques that we used to study people who present themselves to psychiatric services.

That was one point. Related to it was the question of how people who are not patients handle those same life situations that give our patients such serious problems. Work with patients suggested that many of the critical events in their lives leading to illness were common human experiences. How do people who aren't patients handle such problems — sexual problems, problems of jealousy, problems of discrepancies between what they would like to be and what they actually are?

When I began to ask questions of "wise persons" as to how to go about research in this area, I was directed to consider anthropology by Adolf

Meyer, the Chief of Psychiatry at Johns Hopkins, and that's really, I suppose, why I took off in the anthropological direction rather than the sociological or the social psychological. There was at that time almost nothing anyhow in sociology or anthropology in Baltimore. Meyer was a member of the Social Science Research Council and knew most of the leading social scientists in the United States. The social sciences had interested him ever since he had been in Kankakee, Illinois and hobnobbed with people like W.I. Thomas. Out of this background he suggested I talk to Malinowski and in fact he brought Malinowski, who was then at Yale, to Baltimore to conduct a seminar. That gave me a couple of days of quite splendid opportunity to talk with Malinowski and to follow it up later with other visits to him. It was a glorious opportunity, for he died within a year or two of that time.

In addition, the psychologist Norman Cameron was taking training in psychiatry at Johns Hopkins about this time, and he put me in touch with Clyde Kluckhohn. They had both come from the University of Wisconsin and had known each other there. About the same time, also, I met Ruth Benedict and Margaret Mead. All this led to my applying to the Social Science Research Council, with Dorothea Leighton, for a year's fellowship to study anthropology. Ralph Linton agreed to be the director of our studies and suggested that after some class room work at Columbia, we go to the field among the Navajos and the Eskimos of St. Lawrence Island.

All this was preparation for studying normal people in our own culture. We were following a dictum given us by Malinowski: "If you want to look at the earth you had better begin by going to the moon and looking back." He also referred to the famous saying — I think it is from Carlyle — "if you want to know about salt water don't ask a cod." He thought we should study another culture or two and from that vantage point look back at our own.

So that led to work among the Navajo and with the Inuit. Then, as I have mentioned, this was followed by work with people of Japanese culture, first in the U.S. and then finally in Japan, for a total period of about four years concentrated on the study of Japanese culture, including study of the language.

When the war was over I considered what to do now, after what had turned out to be quite a bit more of going to moons and looking back at the earth than Malinowski had in mind when he suggested it.

Two thoughts occurred. One was that both cultural anthropology and psychiatry were in a state of confusion due to theory proliferation without sufficient observational data. It seemed almost a form of addiction in people like Geoffrey Gorer, with his theories that all you needed to do to understand Japanese behaviour was to analyze their toilet training! And Weston La Barre — oh, there were many, many people who were highly ingenious at spinning webs of theory, but as a former physiologist and field naturalist, I

couldn't see that that kind of thinking could ever lead to separating highly probable propositions from highly improbable ones. It didn't lead to amassing data, especially quantitative data, that would help you make the kind of distinctions that you had to make if you were going to be serious about being scientific.

Psychiatry was always claiming that it was scientific, and indeed it is in many ways. But the only part of it that had a procedural structure that was scientific was the biological side, which to me was woefully simplistic. It seemed to me that what we needed were picks and shovels and not more theory, and we needed to pull out of theory a few general propositions that could take common sense as a point of departure. In that frame of reference one could plan the collection of quantitative data that would begin to enable us to sort the more likely propositions from the unlikely propositions.

And so I thought about studying a group of people living in their natural settings. I discovered later there was such a thing as population studies. But I was thinking of it more as an ecologist would. More like Fraser Darling's *West Highland Survey*, though I didn't know about it at the time.

My hope was to study the population in its natural setting and then see what kinds of quantitative data you could collect that would be useful in describing what the social patterns and the cultural patterns really were and the variations in them. Getting those things pinned down, what is the difference between what people say and what in fact they do?

On one side this shaped up as community studies. On the other hand it shaped up as studies of individuals along the lines used in studying patients. I took the topical targets of inquiry from the usual mental status and history questions put to every patient seen at the Hopkins Psychiatric Clinic. Doing it this way made it possible to compare patients and non-patients.

I thought qualitative work to be as important as quantitative, so we had observers live in selected communities in order to describe them. We also utilized the questionnaire approach, which had been greatly developed during the war by sociologists and psychologists.

The data collected included age, sex, occupation, income, and biological as well as social data. It wasn't until we were well into it that I began trying to find quantitative methods for gathering and analyzing data and for relating it to qualitative observations. I thought if the qualitative data seem to be telling a story, the story may or may not be true. Therefore, you need samples from which to draw quantitative data to tell you whether the story is true or more-or-less true or way off. That was my notion of interaction between the qualitative and quantitative approaches to the study of communities and individuals.

Thus the Stirling County Study emerged. For a while I thought of doing it in New Mexico, in the Ramah area, south of Gallup where there were pop-

ulations of Navajo, Zunis, Spanish speaking people, and Mormons who had been there since the middle of the 19th century. There were also newcomers from Texas who had moved in during the Dust Bowl Era of the Thirties. They were called "Texicans." This was a wonderful array of cultural contrast for study. But I decided not, partly because it seemed really more than the methods and technical skills that we had available would be able to meet. The degree of cultural diversity was too great. Moreover it was all changing very rapidly. Then there was also the large problem of getting researchers who would be able to speak those different languages with the degree of fluency required by study aims. Stirling County seemed a better starting place for such work. It had just two language groups, French and English, in both of which it would not be too difficult to recruit behavioural science professionals. In addition, Stirling County offered many advantages. It had quite a range of socio-economic conditions within a distance of sixty by thirty miles. It had the two cultural groups just mentioned, each divided into three different styles of life: the fishermen, and the occupations associated with lumbering, and then a small population of farming people. There were also, of course, the entrepreneurial kinds of activities, stores, professional services, etc., that you find clustered in the towns. I was able to spend a year or so going around the county and talking to the people I knew and ascertaining to what extent they thought that this kind of a study would be acceptable and likely to evoke cooperation.

Barkow: So your childhood visits were another advantage. What do you think the long-term influence of the Stirling County Study has been?

Leighton: I haven't a clue. I am always pleased when people tell me they have heard of it or that it had contributed some to their training in either anthropology or psychiatry but I don't really have any idea how much this has actually happened.

Barkow: Alec, before you were interested in psychiatry or in anthropology your first love was biology, wasn't it?

Leighton: Yes, I think that is true. It was a particular part of biology though, it was the behaviour of wildlife. My mother had a tremendous interest in nature, and my father too. He used to read to us on Sundays at dinner, books that he enjoyed. One of these was Gilbert White's *Natural History of Selbourne*. It covers a period of observations from about 1755 to 1780 and is both science and a piece of English literature. It describes wildlife in and about a village in Hampshire. And Izaak Walton was another author my father used to read to us.

That is probably more ancient history than you want to hear, but anyway, from that start I got more and more interested in mammalogy and still am a member of the American Society of Mammalogists. At high school age

I used to go to their meetings and also spent time in the woods. Which got me going into the woods with the Micmac Indians. I wanted their help in seeing moose and beaver and things like that. Other help and encouragement came from hanging about the Academy of Natural Sciences in Philadelphia. Out of this it seemed natural that in college I should major in biology. I thought perhaps I was going to become an ecologist. I spent two summers in the woods as an undergraduate, gathering material for an undergraduate thesis in the Department of Biology at Princeton which ultimately focussed on the behaviour of the beaver. During that time I also got quite interested in neurophysiology as a possible source of information about behaviour. That was part of the reason I went to Cambridge after I graduated from Princeton, in order to work with Edgar Douglas Adrian. He was a leading figure in neurophysiology and Cambridge was a center for that field at that time.

However, another reason for this move was the Great Depression. It seemed to me that becoming a Ph.D. graduate student in biology at that time was not exactly a strong economic position, should my father's business go down the tubes. This seemed a possibility in the early thirties, and I thought I ought to work toward a position in which I could help the family if need be. So I went for an M.D. It seemed that with that degree I could go forward into research or do part-time or full-time practice if that turned out more desirable. In Cambridge I did pre-clinical training in medicine, and then came back to Johns Hopkins and entered clinical medicine. But while in Cambridge I also did the equivalent of a Masters Degree called the Natural Science Tripos, Part II, in Neurophysiology. So I have had both some experience as a field naturalist and a lot of fun in the laboratory investigating the nature of the peripheral nervous system.

Barkow: I think that early background shows in your work because you never forget that human beings, whatever else we are, are animals.

Leighton: So we are.

Barkow: You've striven to make psychiatry a more scientific discipline, one that makes use of epidemiology and of anthropology. Thinking back over the years, where do you see progress and where don't you see it?

Leighton: That is a good question and I don't know that I have thought about it as much as I should have. Certainly not so much as it deserves. I think we are still hung up on theory in psychiatry. I think the same is true in cultural anthropology — more so even than when I came in. The fascination with theory and the unwillingness to do the dogs-body work that you have to do in order to tie things down with quantitative evidence is a handicap to the advance of psychiatry and of anthropology. Both fields are too susceptible to theoretical glitter.

Pharmacology, of course, in a practical way has done great things for

mentally ill people. When I was a resident the history of psychiatry was littered with the dead careers of people who had tried to get "the answer" to mental illness by the biological route, and very little progress, aside from uncovering the etiology of syphilis and pellagra, had been made. This was one reason why it seemed to me that the time was perhaps ripe for investigating the social environment. Perhaps the disciplines pertinent to it would have something to offer.

Biology is, of course, no longer so sterile. I think we have got many clues that make research on what is now called neurobiology very promising, and I think that the clinically, socially and culturally oriented people who are resisting that approach rather than welcoming it are making a mistake. It is a little disappointing that there hasn't been more interest of a scientific and investigatory type in human behaviour as such in psychiatry, and you can say the same of the social sciences. I think sociology has gone backward.

Saying that is of course to blow off an opinion, but perhaps that is what you are supposed to do in an interview. Right after the war under the leadership of Robert Merton, Paul Lazarsfeld, Edward Suchman and Robin Williams, there was a strong empirical bent in American sociology. It differed thus from European sociology, which was mostly political philosophy. It was trying to build theory cumulatively from factual material and, as far as I can see, that is not nearly so strong a trend now as it used to be. In anthropology, culture and personality has gone by the board, which I think is too bad. I think there were potentialities for methods there that might have gone somewhere. I am afraid that anthropology has become focussed on cultural determinism and cultural relativity to the point of dogma. This is beginning to be unproductive and counterproductive, because it blocks the way to looking at other determining and etiological factors which are also in the multifactorial total. Since the war it seems to me that these disciplines have lost interest in testing theories and would rather invent them. I think this has happened because in both psychiatry and in the social sciences there is a very great hostility to biological determinism of any kind. This makes them reluctant to put things to a test. All this I am saying is a very subjective judgement, but I have had a lot of students, and I've watched them through the years, and I have seen them shy off, struggle and kick and fight like a salmon not to be landed in a field where they will have to put things to a test. They would much rather spin speculation than gather data that could tell them that this or that idea is wrong or very unlikely.

Barkow: Once upon a time, missionaries and anthropologists seemed to have almost a monopoly on cross-cultural experience. Nowadays, university undergraduates, business people, and volunteers of all kinds find themselves immersed in other ways of life. I know that back in the 1950s you were involved in what was probably one of the world's most successful programs

for preparing people for cross-cultural experience. Could you tell us about it?

Leighton: I think you are referring to the Southwestern Seminar that we ran from Cornell, sponsored by the Russell Sage Foundation. That was a lot of fun. It was one of the most interesting pedagogical experiences I have ever had.

On the other hand, I don't think it was all that world-shakingly success-ful, because we were never able to attract very many students, even though we did run it for five years. But it was, as I say, a lot of fun. It was the only time in my life when, over a short period of six weeks, it seemed to me that people really changed their values, their attitudes and their orientations. The students were not behavioural science students but agronomists, engineers, nutritionists, dentists, and doctors, going to work in third world environments and cultures. They were well trained in their particular disciplines. The course was designed for those who had had no cultural anthropological train-ing. The purpose was to give them a real, three dimensional feel for what it is like to be in and of another culture.

The first week we met in such places as the Forestry Camp in the San Francisco Mountains just outside of Flagstaff, Arizona — a lovely spot to reflect and read. We were planning to visit the Papago tribe as the first "for-eign country." The students were given three intense days of studying Papago culture. They read; we had anthropologists, who were Papago experts, come and talk, and then we had the interviewing demonstrations and finally role-playing, in which the students alternated as Papagos and as inter-viewers. That generated a lot of discussion about what was good, what was bad, what was theoretically feasible and so forth. It alerted people and gave some practice. Then we went to the Papago reservation in Southern Arizona, about a day's drive from the Camp. On the way you dropped from summer-time in Maine down to summertime in the Sonoran Desert, where the temper-ature rarely goes below 100° F during the day and where the desert heat makes the cacti shimmer as if they were underwater. This change hits you dramatically when you go down the side of the mesa near Congress Junction. We camped at Sells, which is the headquarters of the Papago Indian Agency. As you know, the Papago reservation is fairly large, about the size of Connec-ticut.

The first day in the Papago country we met with the heads of the ser-vices at Sells. We explained ourselves, and they told us about what the Agency was trying to do. Then they very kindly arranged it for us so that each of the specialties represented by our students could interview his or her counterpart in the agency. Thus, nurses and doctors in our group talked with individual agency doctors and nurses. The agronomists saw the agricultural extension agency workers and so on. The students pumped the agency people about the Indians and about what problems there were in providing services.

And after doing this all day, we had a seminar at night around a camp fire at which each student shared his experience with the others and reviewed the problems the agency was having in his field. The students enjoyed talking to individuals in their own professions. It gave a sense of reality to what they were learning.

The second day they had an opportunity to interview the chairmen of the various Tribal Council committees. This was the first contact with Papagos. Again the students were divided according to their professions and interests and matched with the committee chairmen according to the tasks assigned the committees. In general, these corresponded to the service divisions of the agency. Of course, in this situation, they learned new things, things not heard the day before. Again there was the camp fire seminar in the evening, and this time there was even more excitement because the students felt they were getting a new angle on things and closer to the real truth. The seminars discussed how one might interpret discrepancies.

On day three we had what the students came to call "the parachute jump." This involved starting out at 4:00 a.m. and, after going 20 miles or more out into the desert, stopping at a village to cast out a student. His or her mission was to spend three days there, find somebody who could speak English, first, and then find with the aid of that person someone who would take him or her in for the three nights and provide food. With that settled, they were to begin interviewing village informants on a topic of the student's choosing. Because not many of the Papagos spoke English, part of the challenge was learning how to establish communications, nonetheless. So we went on across the desert, dropping off students until we were rid of them all.

Now, this wasn't completely unplanned and the students knew that. We had permission from the Tribal Council, who had in turn gotten approval from each village headman where we stopped. The villagers knew we were coming and had agreed to it. We did not, however, make any advance arrangements as to who would take in the student. That part was not prearranged. Well, our almost universal experience was that when we came back to pick up the students they were ecstatic, because they had found they could do what had seemed very daunting, at first. They found they could gather information, much of it more detailed and interesting than anything previously learned. They felt it to be a grass roots experience, rewarding and enlightening.

I remember one economist, a student of Kenneth Galbraith, who was very puzzled about the input-output economy of the Papago. He couldn't see how it could possibly operate. He reviewed the books of the Agency and the traders' books, but he couldn't see how they could be making a living. In the village, however, he discovered that many Papagos went to fiestas and to visit relatives in Mexico several times a year. They earned their cash in Arizona

but they did much of their grocery shopping in Mexico, plus a little selling in Arizona of what they bought in Mexico. Prices were much lower in Mexico.

The kind of thing we did with the Papagos was repeated in two other cultural groups. These consisted of Navajos and of the Spanish-speaking villages in the Upper Rio Grande Valley.

At the end, we had a session in which there was a sort of comprehensive exam. In this we asked the students to imagine that each had a close friend who was going off to some country that he had never been to before, a third world country. This friend would be of the same profession as the student. The task was to write the friend a long letter, in which the student would set down for him or her the things he or she should know in order to begin the job. What were the main points about human relations and culture that the friend should know? The students sweated away over that. They enjoyed this writing very much, as it gave them a chance to synthesize their experiences, observations and reading. They seemed to get a lot out of it and I know we the teachers learned tremendously from what they said.

Interestingly enough, some of the students were themselves natives of the countries to which they were going. These were professionals, but upper-class in their countries. They felt they did not know how to work with and teach working class people, even if in their own culture. The very idea that they might have to take up a handful of soil and show it to a peasant and explain about it or demonstrate how to plant — these were things they had no idea about.

Barkow: Why don't we have such programs, today?

Leighton: I don't know, I think there would be a place for them. Perhaps there are some.

Barkow: We have been spending a lot of time talking about what you have done in the past: What are you working on now?

Leighton: Well, in a word, I am working with Jane Murphy Leighton on the analyses of the data that we have been collecting in Stirling County since 1948. That is when the first qualitative field studies were made. Our first systematic survey was in 1952 and we continued to gather data full scale until 1970. Since that date we have mostly been analyzing. We have intermittent time and population samples. As the information becomes longitudinal, it grows tremendously complicated and you move from what epidemiologists call *prevalence* studies, which is the number of cases in a population at a given moment in time, to what they call *incidence* studies, which is the number of new cases appearing over a period of time. With that you enter the intellectual big-time, because that is when you begin to see antecedents and consequents, and where you begin to tie social and cultural processes to mental health consequences and mental illness consequences. We have far more

data than we can probably ever analyze, certainly more than we will ever get completely analyzed. But you do get exciting leads from the material and you do get a wonderful sense of things gradually becoming more and more probable so far as conclusions are concerned, and less and less vague.

It is also fascinating to see how people in different parts of the world, often using very different methods, come up with similar conclusions. Many of our early apprehensions that minor differences in method would make gross differences in findings have so far not proven very true. Life at present is very much like sitting under the Christmas tree all day opening packages.

Jane and her team of epidemiologic and statistical advisers are handling the quantitative analyses and some of the qualitative. My role is to participate in the quantitative analyses, reviewing the nature of the questions we had in mind when the questions were put in the different surveys; and then also the interpretations and the qualitative analysis. I have developed a major interest in the area that you asked about a while ago, that is, the scientific issues about how to study human behaviour and how one can get closure on issues and questions and how to make the work cumulative. And I suppose the way to summarize what I am emphasizing right now is to say that we are interested in the overall synthesis, combining the quantitative and the qualitative approaches so as to make cumulative progress toward more and more refined approximations of the truth. That is what I am putting most of my time into, in coordination with Jane whose analyses are focussed on more specific questions regarding predictors of mental illness and mental health, particularly (and we are just entering into this) regarding what the social and cultural factors involved are. It takes a long time. Christmas has been a long time in coming, but we are getting there.

Barkow : Thank you very much Alec. This has been fun, I hope we can do it again.

Leighton: It has. Thank you very much.

Publications

Leighton, A.H.
   1928   The Turkey Vulture's Eyes. The Auk 45:352-355.
   1932   Notes on the Beaver's Individuality and Mental Characteristics. Journal of Mammalogy 13:117-126.
   1933   Notes on the Relation of Beavers to One Another and to the Muskrat. Journal of Mammalogy 14:27-35.
   1935   Notes on the Behavior of Norwegian Beaver. Journal of Mammalogy 16:189-191.
   1937   The Twilight of the Indian Porpoise Hunters. Natural History 40:410-416, 458.

1941   Photographic Series: A Navaho Makes Soap. A Navaho Takes a *Turkish Bath*. Natural History 48:19-21.

Leighton, A.H., and D.C. Leighton
1941   Elements of Psychotherapy in Navaho Religion. Psychiatry 4:515-523.
1941   Photographic Series: A Navaho Builds a House. A Navaho Makes a Blanket. Natural History 47:272-274.
1941   Therapeutic Values in Navaho Religion. United States Department of the Interior, Office of Indian Affairs.
1942   Some Types of Uneasiness and Fear in a Navaho Indian Community. American Anthropologist 44:195-209.

Leighton, A.H., and T. Lidz
1942   The Talking Pictures in Psychiatric Teaching and Research. American Journal of Psychiatry 98.

Leighton, A.H.
1943   A Working Concept of Morale for Flight Surgeons. Military Surgeon 92.

Leighton, A.H., and Associates of the Colorado River War Relocation Center, Poston, Arizona
1943   Assessing Public Opinion in a Dislocated Community. Public Opinion Quarterly 7:652-688.
1943   The Psychiatric Approach in Problems of Community Management. American Journal of Psychiatry 100:328-339.

Leighton, A.H., and the Bureau of Sociological Research, Colorado River Relocation Center
1943   The Japanese Family in America. Annals of the American Academy of Political and Social Science 229:150-156.

Leighton, A.H., and D.C. Leighton
1944   The Navaho Door. Cambridge, Massachusetts: Harvard University Press.

Leighton, A.H.
1945   The Governing of Men. Princeton: Princeton University Press.
1946   Applied Research and *Pure* Research. American Anthropologist 48:667-668.
1946   That Day at Hiroshima. Atlantic Monthly 178:85-90.

Leighton, A.H., and M.E. Opler
1946   Psychiatry and Applied Anthropology in Psychological Warfare Against Japan. American Journal of Psychoanalysis 6:20-27.

Leighton, A.H.
1947   Applied Science of Human Relations. Personnel Administration 9.
1948   Human Nature and Government Policy. Philosophical Review 57:27-38.
1948   Social Science, Some Requirements for Its Development and Use. *In* Learning, and World Peace, edited by L. Bryson, L. Finkelstein and R.M. MacIver. New York: Harper and Brothers.
1949   Dynamic Forces in International Relations. Mental Hygiene 33:17-24.
1949   Human Relations in a Changing World. New York: E.P. Dutton.
1949   Mental Health and the Problem of Cooperation Between Races and Between Nations. Proceedings of the 1949 Institute of the Mental Hygiene Society of Monroe County, New York.

Leighton, A.H., and D.C. Leighton
1949   Gregorio, The Hand-Trembler. Peabody Museum Papers. Cambridge, Massachusetts: Harvard University Press.

Leighton, A.H.
  1950 A Proposal for Research in the Epidemiology of Psychiatric Disorder. *In* Epidemiology of Mental Disorder, pp. 128-135. New York: Milbank Memorial Fund.
  1951 Adolph Meyer and the Social Sciences. Bulletin of Johns Hopkins Hospital 89:73-80.
Leighton, A.H., J. Adair, and S. Parker
  1951 A Field Method for Teaching Applied Anthropology. Human Organization 10:5-11.
MacMillan, A.M., and A.H. Leighton
  1952 People of the Hinterland. *In* Human Problems in Technological Change, edited by E. Spicer, pp. 225-243. New York Russell Sage Foundation.
Leighton, A.H.
  1953 The Stirling County Study: A Research Program in Social Factors Related to Psychiatric Health. *In* The Interactions Between the Social Environment and Psychiatric Disorder, pp. 161-166. New York: Milbank Memorial Fund.
  1955 Psychiatric Disorder and Social Environment: An Outline for a Frame of Reference. Psychiatry 18:367-383.
Leighton, A.H., and C.C. Hughes
  1955 Notes on Eskimo Patterns of Suicide. Southwestern Journal of Anthropology 11:327-338.
Leighton, A.H., and R.J. Smith
  1955 A Comparative Study of Social and Cultural Change. Proceedings of the American Philosophic Society 11:327-338.
Leighton, A.H.
  1956 Origins of the Stirling County Study (Annual Dinner Address). *In* Programs for Community Mental Health, pp. 203-216. New York: Milbank Memorial Fund.
Leighton, A.H., J.A. Clausen and R.N. Wilson, eds.
  1957 Explorations in Social Psychiatry. New York: Basic Books.
Leighton, A.H., and A. Longaker
  1957 The Psychiatric Clinic as a Community Innovation. *In* Exploration in Social Psychiatry, edited by A.H. Leighton, J.A. Clausen and R.H. Wilson, pp. 365-385. New York: Basic Books.
Leighton, A.H.
  1959 Mental Illness and Acculturation. *In* Medicine and Anthropology, edited by I. Galdston, pp. 108-128. New York: International Universities Press.
  1959 My Name is Legion: The Stirling County Study of Psychiatric Disorder and Sociocultural Environment. New York: Basic Books.
Leighton, A.H., et al.
  1959 On Freedom and Responsibility in Research: Memorandum of Understanding Concerning Basic Principles for Publication of Program Research. Human Organization 18:147-148.
Hughes, C.C., M.A. Tremblay, R.N. Rapoport and A.H. Leighton
  1960 People of Cove and Woodlot: The Stirling County Study. New York: Basic Books.

Leighton, A.H.
  1960   An Introduction to Social Psychiatry. Springfield: Charles Thomas.
Leighton, A.H., et al.
  1960   Epidemiology of Mental Disorders Technical Report No. 185. pp. 3-29.
          Geneva: World Health Organization.
Leighton, A.H.
  1961   From the Point of View of Social Psychiatry. *In* Field Studies in the
          Mental Disorders, edited by J. Zubin, pp. 324-328. New York: Grune and
          Stratton Inc.
  1961   The Stirling County Study: Some Notes on Concepts and Methods. *In*
          Comparative Epidemiology of the Mental Disorders, edited by P.H. Hock
          and J. Zubin, pp. 24-31. New York: Grune and Stratton Inc.
Leighton, A.H., and J.M. Murphy
  1961   Cultures as Causative of Mental Disorder. Milbank Memorial Fund Quar-
          terly 39:446-488.
Leighton, A.H., T. Lin, P.M. Yap, N.S. Kline and T.A. Lambo
  1962   Transcultural Studies: Panel Discussion at the Third World Congress of
          Psychiatry, June 10, 1961. Acta Psychiatrica Scandinavica 38:157-182.
 Leighton, A.H.
  1962   Culture and Mental Health. *In* Trends in Modern Society, edited by C.
          Morris, pp. 57-82. Philadelphia: University of Pennsylvania Press.
Leighton, A.H., and D.C. Leighton
  1962   The First Pan-African Psychiatric Conference. American Journal of Psy-
          chiatry 119:276-278.
Leighton, A.H.
  1962   Nigerian Mental Health Survey Shows Symptoms Patterns Like that of
          Westerners. Interview in Medical Tribune, May 7, p. 2.
Leighton, D.C., J.S. Harding, D.B. Macklin, C.C. Hughes and A.H. Leighton
  1963   Psychiatric Findings of the Stirling County Study. American Journal of
          Psychiatry 119:1021-1026.
Leighton, D.C., J.S. Harding, D.B. Macklin, A.M. MacMillan and A.H. Leighton
  1963   The Character of Danger: The Stirling County Study. New York: Basic
          Books.
Leighton, A.H., and T.A. Lambo
  1963   Psychiatric Problems in Developing Countries. *In* Health and Nutrition,
          Vol. 6: Science, Technology and Development, U.S. Papers prepared for
          the United Nations Conference on the Application of Science and Tech-
          nology for the Benefit of Less Developed Areas, pp. 131-139. Washing-
          ton, D.C.: Government Printing Office.
Leighton, A.H., and T.A. Lambo, C.C. Hughes, D.C. Leighton, J.M. Murphy and
D.B. Macklin
  1963   Psychiatric Disorder Among the Yoruba: A Report from the Cornell-Aro
          Mental Health Research Project in the Western Region, Nigeria. Ithaca,
          New York: Cornell University Press.
  1963   Psychiatric Disorder in West Africa. American Journal of Psychiatry
          120:521-527.
Leighton, A.H., and J.M. Murphy
  1963   Yoruba Concepts of Psychiatric Disorder: Cornell-Aro Epidemiological

Study. *In* First Pan African Psychiatric Conference. Ibadan, Nigeria: Government Printer.

Leighton, D.C., A.H. Leighton and R.A. Armstrong
1964   Community Psychiatry in a Rural Area: A Social Psychiatric Approach. *In* Handbook of Community Psychiatry and Community Mental Health, pp. 166-176. New York: Grune and Stratton.

Gruenberg, E.M., and A.H. Leighton
1965   Epidemiology and Psychiatric Training. *In* Concepts of Community Psychiatry: A Framework for Training. U.S. Department of Health, Education and Welfare, Public Health Service Publication, No. 1319, pp. 109-115.

Leighton, A.H.
1965   Cultural Change and Psychiatric Disorder. *In* CIBA Foundation Symposium on Transcultural Psychiatry, edited by A.V.S. deReuck and R. Porter, pp. 216-228. London: J. and A. Churchill Ltd.
1965   Possibilities for Community Action. *In* Stimulating, Developing and Mobilizing Community Action for Mental Health Career Motivation: Proceeding of a Workshop for Community Leaders and Mental Health Personnel. Louisville, Kentucky: Kentucky Mental Health Manpower Commission.
1965   Poverty and Social Change. Scientific American 212:21-24.

Leighton, A.H., and J.M. Murphy
1965   Cross-Cultural Psychiatry. *In* Approaches to Cross-Cultural Psychiatry, edited by J.M. Murphy and A.H. Leighton, pp. 3-20. New York: Cornell University Press.
1965   The Problem of Cultural Distortion. Milbank Memorial Fund Quarterly 43:189-198.

Murphy, J.M., and A.H. Leighton
1965   Approaches to Cross-Cultural Psychiatry. New York: Cornell University Press.
1965   Native Conceptions of Psychiatric Disorder. *In* Approaches to Cross-Cultural Psychiatry, edited by J.M. Murphy and A.H. Leighton, pp. 64-107. Ithaca: Cornell University Press.

Savage, C., A.H. Leighton and D.C. Leighton
1965   The Problem of Cross-Cultural Identification of Psychiatric Disorders, edited by J.M. Murphy and A.H. Leighton, pp. 21-63. Ithaca: Cornell University Press.

Leighton, A.H.
1966   The Challenge to Psychiatry in a Changing World: A Symposium — Introduction. American Journal of Psychiatry 122:1385-1386.
1966   Psychiatric Disorder and Social Environment: An Outline for a Frame of Reference. *In* Issues and Problems in Social Psychiatry: A Book of Readings, edited by B.J. Bergen and C. Thomas, pp. 155-197. Springfield, Illinois: Charles C. Thomas.
1966   Social Psychiatry and the Concept of Cause. American Journal of Psychiatry 122:929-930.

Leighton, A.H., D.C. Leighton and R.A. Danley
1966   Validity in Mental Health Surveys. Canadian Psychiatric Association Journal 11:167-178.

Stone, I.T., D.C. Leighton and A.H. Leighton
   1966   Poverty and the Individual. *In* Poverty and Affluence, edited by L. Fish-
          man, pp. 72-96. New Haven: Yale University Press.
Leighton, A.H.
   1967   Assessment of Change in Community Mental Health. *In* Proceedings of
          the White House Conference on Health, 1965, U.S. Department of Health
          Education and Welfare. Washington, D.C.: Government Printing Office.
   1967   Discussion of Dr. Milton Greenblatt and Dr. Myron R. Sharaf's Paper.
          Psychiatric Research Report 21. Washington, D.C.: American Psychiatric
          Association.
   1967   Is Social Environment a Cause of Psychiatric Disorder? *In* Psychiatric
          Epidemiology and Mental Health Planning, edited by R.F. Monroe, G.D.
          Klee and E.B. Brody. Psychiatric Research Report No. 22. Washington,
          D.C.: American Psychiatric Association.
   1967   Social Psychiatry: Socioeconomic Factors in Mental Health and Disease.
          In Historic Derivations of Modern Psychiatry, edited by I. Galdston, pp.
          219-232. New York: McGraw-Hill.
   1967   Some Notes on Preventive Psychiatry. Canadian Psychiatric Association
          Journal 12:43-50.
   1967   Some Observations on the Prevalence of Mental Illness in Contrasting
          Communities. *In* Social and Genetic Influence on Life and Death, edited
          by L. Platt and A.S. Parkes, pp. 97-111. Edinburgh: Oliver and Boyd.
Leighton D.C., and A.H. Leighton
   1967   Mental Health and Social Factors *In* Comprehensive Textbook of Psychi-
          atry, edited by A.M. Freedman and H.I. Kaplan, pp. 1520-1533. Bal-
          timore: Williams and Wilkins Co.
Leighton A.H.
   1968   Introduction to Mental Health of the American Indian. American Journal
          of Psychiatry 125:113-114.
   1968   Social Psychiatry. *In* International Encyclopedia of the Social Sciences
          12:622-629.
   1968   Some Propositions Regarding the Relationship of Sociocultural Integra-
          tion and Disintegration to Mental Health. *In* Social Psychiatry, edited by
          J. Zubin and F.A. Freyhan, pp. 1-7. New York: Grune and Stratton.
Leighton, A.H., R. Prince and R. May
   1968   The Therapeutic Process in Cross-Cultural Perspective – A Symposium.
          American Journal of Psychiatry 124:1171-1183.
Cassal, J.C., and A.H. Leighton
   1969   Epidemiology and Mental Health. *In* Mental Health Considerations in
          Public Health, edited by S.E. Goldston, pp. 69-85. U.S. Department of
          Health, Education and Welfare, Public Health Service, Health Services
          and Mental Health Administration, National Institute of Mental Health,
          Publication No. 1898. Washington, D.C.: Government Printing Office.
Leighton, A.H.
   1969   A Comparative Study of Psychiatric Disorder in Nigeria and Rural North
          America. *In* Changing Perspectives in Mental Illness, edited by S.C. Plog
          and R.B. Edgerton, pp. 179-199. New York: Holt Rinehart and Winston.
   1969   Cultural Relativity and the Identification of Psychiatric Disorders. *In*

Mental Health Research in Asia and the Pacific, edited by W. Claudill and T. Lin, pp. 448-462. Honolulu: East-West Center Press.

1969   The Etiology of Diagnosis. American Journal of Psychiatry 125:1426-1427.

1969   Psychiatry and the Health of the Public. *In* Medicine in the University and Community of the Future, Proceedings of the Scientific Sessions Marking the Centennial of the Faculty of Medicine, Dalhousie University., edited by I.E. Purkis and U.F. Mathews, pp. 70-72. Halifax: Faculty of Medicine, Dalhousie University.

Benfari, R., and A.H. Leighton

1970   Comparison of Factor Structures in Urban New York and Rural Nova Scotia Population Samples: A Study in Psychiatric Epidemiology. *In* The Community as an Epidemiologic Laboratory: A Casebook of Community Studies, edited by I.I. Kessler and M.L. Levin, pp. 235-251. Baltimore: Johns Hopkins Press.

1970   PROBE: A Computer Instrument for Field Surveys of Psychiatric Disorder. Archives of General Psychiatry 23:352-358.

Leighton, A.H.

1971   Come Near (A Novel). New York: W.W. Norton and Company.

1971   Psychiatric Disorder and Social Environment: An Outline for a Frame of Reference. *In* Psychiatric Disorder and the Urban Environment, edited by B.H.Kaplan (in cooperation with A.H. Leighton, J.M. Murphy and N. Freydberg). New York: Behavioral Publications.

Leighton, D.C., O. Hagnell, A.H. Leighton et al.

1971   Psychiatric Disorder in a Swedish and a Canadian Community: An Exploratory Study. Social Science and Medicine 5:189-209.

Benfari, R.C., M.Beiser, A.H. Leighton and C.J. Mertens

1972   Some Dimensions of Psychoneurotic Behavior in an Urban Sample. Journal of Nervous and Mental Disorders 155:77-90.

Benfari, R.C., A.H. Leighton et al.

1972   CASE: Computer Assigned Symptom Evaluation: An Instrument for Psychiatric Epidemiological Application. Journal of Nervous and Mental Disorders 154:115-124.

Leighton, A.H.

1972   Guest Editorial on the Future Role of Psychiatry in Medical Care. Psychiatric News 7:2.

1972   Reflections of a Tender-Minded Radical. *In* Transcultural Research in Mental Health. Honolulu: University Press of Hawaii, edited by W. Lebra, pp. 407-423.

Leighton, A.H., E.A. Mason, J.C. Kern and F.A. Leighton

1972   Moving Pictures As an Aid in Community Development. Human Organization 31:11-21.

Leighton, A.H., and J.M. Murphy

1972   An Introduction. *In* Man and His Urban Environment: A Manual of Specific Considerations for the Seventies and Beyond. 30 Rockefeller Plaza, New York: Man and His Urban Environment Project.

Leighton, A.H. (Panel Member)

1972   Aspects of the Metropolitan Health Care System that Represent the

Responsibilities of the University-Based Medical Center. *In* The Future of University-Based Metropolitan Medical Centers: Proceedings of the New York Hospital Bicentennial Colloquium, pp. 53-107. New York: Josiah Macy, Jr. Foundation.

Leighton, A.H., and J.M. Murphy
1973   Behavioral Sciences and Health. Mount Sinai Journal of Medicine 40:551-561.

Benfari, R.C., M. Beiser, A.H. Leighton et al.
1974   The Manifestation of Types of Psychological States in an Urban Sample. Journal of Clinical Psychology 30:471-483.

Leighton, A.H.
1974   The Erosion of Norms. Australia and New Zealand Journal of Psychiatry 8:223-227.

1974   Social Disintegration and Mental Disorder. *In* American Handbook of Psychiatry, Vol. 2, 2nd ed, edited by S. Arieti, and G. Caplan, pp. 411-423. New York: Basic Books.

Murphy, J.M., G.D. Murfin, N.L. Jamieson, A.T. Rambo, J.A. Glenn, L.P. Jones and A.H. Leighton
1974   Beliefs, Attitudes, and Behavior of Lowland Vietnamese, The Effects of Herbicides in South Vietnam. Washington: National Academy of Sciences.

Cardoza, V.G., W.C. Ackerly and A.H. Leighton
1975   Improving Mental Health Through Community Action. Community Mental Health Journal 11:215-227.

Leighton, A.H.
1975   The Legend of the Fabulous Zoo. Psychiatric Annals 4.

Benfari, R.C., and M. Beiser, A.H. Leighton and J.M.Murphy
1976   The Measurement of Health in Populations. *In* Further Explorations in Social Psychiatry, edited by B.H. Kaplan, R.N. Wilson and A.H. Leighton, pp. 290-306. New York: Basic Books.

Benfari, R.C., and A.H. Leighton
1976   The Uses of the Computer in Psychiatric Behavioral Epidemiology. *In* Further Explorations in Social Psychiatry, edited by B.H. Kaplan, R.N. Wilson and A.H. Leighton, pp. 355-376. New York: Basic Books.

Benfari, R.C., A.H. Leighton and J.M. Murphy.
1976   Human Behavior Patterns. *In* Frontiers of Psychiatric Genetics, edited by F.C. Worden, B.Childs, S. Matthysse and E.S. Gershon. Neuroscience Research Program Bulletin 14:75-79.

Beiser, M., and A.H. Leighton.
1976   Personality Assets and Mental Health. *In* Further Explorations in Social Psychiatry, edited by B.H. Kaplan, R.N. Wilson and A.H. Leighton, pp. 178-192. New York: Basic Books.

Kaplan, B.H., R.N. Wilson and A.H. Leighton, eds.
1976   Further Explorations in Social Psychiatry. New York: Basic Books.

Leighton, A.H., and J.S. Rolland
1976   New Indicators of the Dependent Variable. *In* Further Explorations in Social Psychiatry, edited by B.H. Kaplan, R.N. Wilson and A.H. Leighton. New York: Basic Books.

Leighton, A.H.
  1977   The Need for Further Study (Comment on Ochberg, F.M. and L.D. Ozarin's *The Rationale of Community Mental Health*, and S.F. Yolles' *Community Mental Health Service*). *In* New Trends in Psychiatry in the Community, edited by G. Serban, pp. 45-52. Cambridge, Maryland: Ballinger Publishing.
  1977   Reminiscences of Applied Anthropology. Anthropology in Canada, Proceedings No. 4 of the Canadian Ethnology Society, pp. 189-205. Hamilton, Ontario: McMaster University.
  1978   The Compass and the Troubled Sea. Psychiatric Annals 8:80-85.
  1979   Research Directions in Psychiatric Epidemiology. Psychological Medicine 9:235-247.
  1981   Culture and Psychiatry. Canadian Journal of Psychiatry 26:522-529.
  1981   The Editor's Interview. New England Journal of Human Services 1:6-14.
  1982   A Recurrent Millennium: The Cure and Prevention of Mental Illnesses. Canadian Mental Health 30:2-5.
  1982   Caring for Mentally Ill People: Psychological and Social Barriers in Historical Context. New York: Cambridge University Press.
  1982   Relevant Generic Issues. *In* Cross-Cultural Psychiatry, edited by A.Gaw, pp. 199-236, 307-350. Boston: John Wright.
  1983   Understanding the Effects of Societal Dislocation. *In* Southeast Asian Mental Health in the Western Context: Grief Reaction, Disaster Reaction, Cultural Context, edited by L.K. August and D. Lescohier, pp. 88-95. Proceedings of Southeast Asian Refugee Mental Health Symposium. Rhode Island and Massachusetts Offices of Refugee Settlement.
  1983   Situational Research. Canadian Journal of Community Mental Health 1:166-173.
  1984   Barriers to Adequate Care for Mentally Ill People. Social Science and Medicine 18:237-241.
  1984   Then and Now: Some Notes on the Interaction of Person and Social Environment. Human Organization 43:189-197.
Leighton, A.H., J.M. Murphy and A. Munro
  1984   Caring for Mentally Ill People in Nova Scotia. Nova Scotia Medical Bulletin 63:52-55.
Murphy, J.M., A.M. Sobol, R.K. Neff, D.C. Olivier and A.H. Leighton
  1984   Stability of Prevalence. Archives of General Psychiatry 41:990-997.
A.H. Leighton
  1986   The Initial Frame of Reference of the Stirling County Study: Main Questions Asked and Reasons for Them. *In* Mental Disorders in the Community: Progress and Challenges, edited by J. Barrett and R. Rose, pp. 111-127. New York: Guilford Press.
Murphy, J.M., D.C. Olivier, A.M. Sobol, R.R. Monson and A.H. Leighton
  1986   Diagnosis and Outcome: Depression and Anxiety in a General Population. Psychological Medicine 16:117-126.
A.H. Leighton
  1986   Preface. *In* A Representative Psychiatrist: The Career, Contributions and Legacies of Sir Aubrey Lewis, by M. Shepard. Psychological Medicine, Monograph Supplement 10.

1986   Psychiatric Epidemiology and Social Psychiatry. American Journal of
         Social Psychiatry 6:221-226.
Leighton, A.H., and J.M. Murphy
  1987   Primary Prevention of Psychiatric Disorders. Acta Psychiatrica Scandi-
         navica Supplement 337, 76:7-13.
Murphy, J.M., R.R. Monson, D.C. Olivier, A.M. Sobol and A.H. Leighton
  1987   Affective Disorders and Mortality: A General Population Study. Archives
         of General Psychiatry 44:473-480.
Leighton, A.H.
  1988   Avenues to Understanding Man, Robert Gessain 1907-1986. Musée de
         l'Homme.
Murphy, J.M., D.C. Olivier, R.R. Monson, A.M. Sobol and A.H. Leighton
  1988   Incidence of Depression and Anxiety: The Stirling County Study. Ameri-
         can Journal of Public Health 78:534-540.
Murphy, J.M., R.R. Monson, D.C. Olivier, A.M. Sobol, L.A. Pratt and A.H. Leigh-
ton
  In press Mortality Risk and Psychiatric Disorders Results of a General Physician
         Survey. Social Psychiatry and Psychiatric Epidemiology.
Leighton, J.N. and A.H.
  In press Repeated Investigations of Prevalence: The Stirling County Study. *In*
         Repeat Surveys of the Prevalence of Mental Disorders in the General
         Population, edited by J.A. Nielson, N. Sartorius and E. Stromgren. Acta
         Psychiatrica Scandinavica Supplement.
Leighton, A.H.
  In press Global and Specific Approaches to Prevention. *In* Proceedings of the
         1987 Meeting of the Section on Epidemiology and Community Behavior,
         edited by B. Cooper. World Psychiatric Association.

BOOK REVIEWS: COMPTES RENDUS

**The Hour of the Fox: Tropical Forests, the World Bank, and
Indigenous People in Central India**
Robert S. Anderson and Walter Huber
Seattle: University of Washington Press, 1988. xiii + 158 pp. $25.00 (cloth)

Reviewer: John H. Bodley
Washington State University

This is an extended case study of a massive development project supported by the World Bank and the Indian government, between 1975 and 1981, in the Bastar district of Madhya Pradesh. The $7.5 million Bastar Technical Assistance Project was designed to install a forest-industry corporation which would annually convert up to 46 square kilometres of India's largest remaining tropical forest into a plantation of monocrop pines to produce pulp for paper manufacturing. The idea was to make an otherwise "unproductive" forest and an underemployed, impoverished population into an economically profitable asset that would help ease India's foreign debt. This project is especially significant because it illustrates the folly of large-scale technical assistance projects that emphasize technology and economic components while neglecting the needs of the local people who will ultimately be most affected. The Barstar project was terminated primarily because the tribal residents of the forest overwhelmingly rejected it, although many other intractable social and political problems also arose.

Bastar is a forested, predominantly tribal district, with a relatively low population density of only 47 persons per square kilometre, roughly half the average for Madhya Pradesh. Nearly 70 percent of the district's 1.8 million people are Gondi speakers. They are forest-dependent, self-sufficient, shifting cultivators and hunters. For some 400 years the tribal people were loosely incorporated into the regional Hindu kingdom of Bastar, which became a semi-autonomous princely state under the British. The tribal people had maintained control of the forests and enjoyed considerable autonomy, but, since Indian independence, regulation of forest resources has increasingly come under outside control. The externally initiated Bastar forestry project represented an extreme disregard for traditional tribal claims. The local people rejected the project because they recognized that it would ultimately destroy the forest which provided their basic needs, while leaving them impoverished and dependent on the market economy.

This book is a natural history of the project. Both authors are trained anthropologists with extensive experience in India. They write not as participants in the Bastar project, but as careful investigators who collected oral and documentary material from many sources, visited the area, and interviewed those involved at all levels. They present the historic and ethnographic background of Bastar and analyze in detail the differing motivations and perceptions of the various parties involved, including the local tribal residents, state and national forestry-department officials, the technical consultants, and the special forest-development corporation established by the project.

The most striking finding of this study is the planners' arrogant disregard for the social implications of the project. While the feasibility study was expected to

take some two years, barely 1 percent of the budget was allotted for the "tribal component," which was carried out in less than six months. A complete assessment of the relationship between the tribal peoples and the forest could hardly have been obtained in such a short time, but, even so, the tribal report clearly showed the serious negative social impact of the project.

The termination of the Bastar project came at a time when World Bank projects in other parts of the world were coming under increasing attack. For example, by 1980 tribal peoples were forcibly resisting the Bank's hydroelectric projects in the Philippines, and many critics of Bank policy were raising concerns about the environmental and human costs of development in Brazil. These events were at least partly responsible for the background paper by Robert Goodland, *Tribal Peoples and Economic Development*, issued by the World Bank in 1982, which declared that the World Bank would not support projects which tribal peoples rejected.

Hindu Women and the Power of Ideology
Vanaja Dhruvarajan
South Hadley, Massachusetts: Bergin and Garvey, 1989. viii + 168 pp. $39.95
(cloth)

Reviewer: Helen Ralston
                Saint Mary's University

This is a fascinating ethnographic study, of the ambivalent status of high- and low-caste Hindu women in a South Indian village, that aims to investigate why Hindu women have such low status as persons, yet such high status as mothers. The explanatory factor is identified as the powerful androcentric Hindu ideology of Pativratya, which rests on patriarchy and which governs all aspects of women's lives within and across caste and class divisions.

Pativratya ideology is based on assumptions about the nature of men and women and their dominant-subordinate interrelationships. Dhruvarajan's study brings out the dualistic conception of woman in Hindu thought. The feminine principle (shakti) is seen as both a creative, benevolent power and a dangerous destructive one. The female principle is complementary to the male principle. When linked with man and controlled by him, woman creates life.

Dhuvarajan's thesis is cogently argued and supported through nine chapters. Chapter 1 presents the village setting — its economic and social structure, caste composition and status relationships. An appendix provides a complementary statistical profile. Chapter 2 describes data collection with a sensitive awareness and an uncommonly frank discussion of the author's relationship to the village and to the interviewees. Chapter 3 clearly explicates the ideology of Pativratya and the book's core argument: again, Pativratya ideology is created, sustained and reproduced by a patriarchal social structure. Women of all castes silently accept their situation and consider it appropriate.

Chapters 4 to 8 set out the structural context of women's lives and their socialization for marriage, arrangement of marriage, married life, old age and widowhood. The rich ethnographic detail of these chapters does not impede the flow of the description and analysis. The background information from 22 selected case his-

tories is placed in an appendix.

Chapter 9 presents an historical analysis of the construction, development and stability of Pativratya ideology under different Indian political and economic conditions. It links the persistent ambivalent status of women, despite improved legal rights, to the continued reproduction of this powerful ideology which specifically precludes women from speaking out and acting collectively. It argues that the productive and reproductive roles of women must be integrated if equality of status is to be achieved.

The book is well organized with a clear presentation of the thesis at the outset, a sustained development, and a good concluding chapter. Explanatory statements throughout and short endnotes make the text accessible to the reader who is unfamiliar with Indian history, Hindu philosophy and the Hindu caste-system. In contrast to other excellent studies of Hindu women's status by Western feminist scholars (such as Maria Mies or Patricia Caplan), this book argues from the perspective of a feminist who is a native of the village. It would be of interest not only to scholars in the social sciences but also to graduate and undergraduate students of women's studies, gender development and comparative family systems. Although the fieldwork was done in 1977, the pace of change in Indian village life is slow and, therefore, the study is still relevant. Moreover, the concluding chapter addresses the contemporary situation of women in India. The selected bibliography is up-to-date and useful.

Out of the Background: Readings on Canadian Native History
Edited by Robin Fisher and Kenneth Coates
Toronto: Copp Clark, 1989. viii + 296 pp. $16.95 (paper)

Reviewer: Thomas Abler
University of Waterloo

Fourteen articles, originally published in diverse sources over the past decade and a half, are reprinted in this useful reader. Papers are drawn from five journals, three conference proceedings and three books. The authors reflect a wide range of disciplines which are making a contribution to our understanding of the Native past. Since only an unusually well-read scholar would have all of these high-quality selections in his/her library, the book will be of interest to established professionals as well as to students in advanced university courses on the history of Canada's Native populations.

Some selections take a broad approach, surveying a major portion of the continent. Others deal with a specific group or even a single community. Bruce Trigger, who has two articles reprinted here, provides one of each. His overview of the Indian in Canadian historical writing paints a broad picture, while his second paper focuses on the impact of the fur trade upon the Huron. The tragic extinction of the Beothuks of Newfoundland is soberly examined in an article by the late L.F.S. Upton. Also reprinted here is Calvin Martin's original presentation of his controversial hypothesis that epidemics resulted in a Native "war against the animals." Both Cornelius Jaenen and Arthur Ray focus on Native attitudes and behaviours over large regions, the former considering 17th century attitudes toward the French and the latter viewing Natives as "economic persons" in interaction with traders in the 18th century.

Sylvia VanKirk's essay documents the active role played by women in the fur trade frontier. Clarence Bolt shows how the Port Simpson Tsimshian were far from passive pawns in the mission setting and in their conversion to Christianity.

Other articles focus more on White behaviour toward Natives. Robin Fisher looks at the attitudes of two groups, fur traders and settlers, toward the Natives of coastal and interior British Columbia. Both John Tobias and Kenneth Coates examine local implementation of government Native policy, Tobias documenting the non-benevolent policy toward the Plains Cree (1879-1885) and Coates, the non-assimilationist policy toward Yukon Indians (1894-1950).

The final three papers deal with contemporary themes, albeit themes with historical roots. Hugh Brody's eloquent prose is excerpted from his *Maps and Dreams* (Douglas & McIntyre, 1981). Noel Dyck discusses non-Native attitudes toward Natives on the Prairies and the response of one Cree in an attempt to alter those attitudes. Finally, the views of George Manuel and Michael Posluns on the Natives as part of the "Fourth World" are presented.

The readability and forcefulness of the articles reflect well upon today's scholarship on Native Canadian history. One might disagree with the ordering of the chapters or regret that more maps were not included, but one must conclude that the papers are worth reading. While not quarreling with the editors' choices, it is worth mentioning that other scholars working in the area of Native history are producing work of similar high quality. Trigger's survey well documents the sins of omission and commission of the past. This book, and the work of many others over the past two decades, is doing much to rectify errors previously made in the name of history.

Rules, Decisions, and Inequality in Egalitarian Societies
Edited by James G. Flanagan and Steve Rayner
Aldershot, England: Avebury, 1988. x + 190 pp. U.S. $44.95 (cloth)

Reviewer: Jerome Rousseau
                McGill University

The eight articles in this book are linked by two main premises: (a) the contrast between egalitarian and inegalitarian societies is analytically invalid, so we must focus on specific instances of equality (and inequality) in each society; and (b) equality is not a given but rather requires rules in order to persist, and the rules which generate equality may be as complex as those which maintain inequality. These papers, which evolved from a session of an American Anthropological Association meeting, also share a broad framework that distinguishes equality of treatment from equality of characteristics. "Equality of characteristics focuses attention on those social attributes with respect to which men [sic] are to be considered equal. Normative statements about equality invariably concern treatment" (Flanagan, p. 165). One can distinguish further between equality of opportunity (where everyone has equal chances to achieve, but inequalities develop when actors perform differently) and equality of outcome (where strategies guarantee that everyone ends up with the same resources and power).

Methodologically, one must agree that it is necessary to identify specific instances of equality and inequality rather than simply to label societies as egali-

tarian or inegalitarian. However, these elements ought also to be placed in a wider context. Unfortunately, such a broadened perspective is not developed here. It is also indeed true that the maintenance of equality requires rules, although the point is not new. Clastres made it in *La Société contre l'état: Recherches d'anthropologie politique* (de Minuit, 1974).

The articles in this volume can be divided into two broad categories: four deal with corporate groups, in capitalist societies, which foster some kind of equality. Three other papers describe aspects of small-scale, nonindustrialized societies. In the first category, Steve Rayner compares a Trotskyite organization to two "Green" alliances. He describes the rules needed to maintain equality in organizations and the costs entailed in insisting on equality. The papers on cooperatives show that it is indeed difficult to maintain equality within a capitalist context. David Greenwood's clear, well-argued and well-documented paper on the Basque industrial cooperatives of Mondragon shows that participants are willing to accept hierarchy and differentiation to achieve solidarity and productivity. Stuart Henry's more rambling paper suggests that the attitude to deviants in cooperatives is an important indication of a group's conceptualization of equality. Gerald Mars shows clearly how ideology, buttressed by the siege mentality of the Israeli state, serves to hide the development of a stable hierarchy allocating special privileges in the kibbutzim.

The papers on small-scale societies are Luther and Ursula Gerlach's on the Digo of Kenya, William Donner's on a Polynesian outlier, and James Flanagan's on the New Guinea Highlands fringe. All three societies show gender and age inequality. One of the societies traditionally had a contrast between ruling lineages and slaves, another distinguished between chiefly and commoner clans, and the third had a big-man system. However, the authors focus on mechanisms which foster equality.

None of the three papers — nor, for that matter, Flanagan and Rayner's introduction — adequately surveys the rich body of writings that exists on equality and inequality, such as the discussions about the domestic (i.e., "primitive communist") and lineage modes of production. Unfortunately, important Francophone work by Alain Testart is left out — *Les chasseurs-cueilleurs ou l'origine des inégalités* (Société d'Ethnographie, 1982) and the provocative *Le communisme primitif*, Vol. 1: *Economie et idéologie* (la Maison des Sciences de l'Homme, 1985). It is of course entirely valid for the authors to focus on mechanisms that foster equality, but the absence of a general theoretical framework creates the impression of an attempt to minimize the significance of inequality in the societies described. Setting aside age and gender inequality begs the question of the relationship between these and other forms of inequality. Traditionally, several anthropologists took the view that, as these were "natural" differences, they had little relevance to social inequality. However, the reverse is likely to be true: human societies have constructed other social inequality in part through the experience of age and gender inequality, and there is, of course, an extensive literature dealing with this issue.

The papers also pay little attention to the significance of colonialism. One example will suffice: the Digo have lost some forms of inequality, such as slavery; however, it may be an overstatement to say that "The Pax Britannica had promoted egalitarianism" (Gerlach and Gerlach, p. 117). Rather, it eliminated forms of inequality which ran counter to the colonial system or offended Western sensibilities, while bringing new forms of inequality. Thus, the Digo find it difficult to hold on to land which was traditionally theirs, because of colonial forms of land manage-

ment. (In fairness, I should note that the Gerlachs describe an interesting mechanism fostering equality, namely, the presence of contradictory rules, such as the opposition between matri- and patrilineality introduced by Islamicization.)

Except for papers by Greenwood and Mars, the articles in this volume could use further analysis and elaboration. Given this, and some inconsistencies in the reference sections, one wonders about the editorial services provided by Avebury Press. The typeface is not pleasant to read; neither are its printing standards impressive. At U.S. $44.95, this short book is grossly overpriced. Nonetheless, it did help me to think about equality in a more systematic fashion, and other readers may benefit similarly.

**An Error in Judgement: The Politics of Medical Care in an
Indian/White Community**
Dara Culhane Speck
Vancouver: Talonbooks, 1987. 281 pp. $12.95 (paper)

Reviewer: Alexander M. Ervin
            University of Saskatchewan

Personally, I would rate this book as the most significant publication in Canadian applied anthropology of the decade. It is all the more remarkable because it was not written by a senior academic but rather was originally formulated as a undergraduate thesis at Simon Fraser University. Although Speck is a novice academic (she is currently a doctoral student at the University of British Columbia), she does not come to this research inexperienced. She draws upon her years as a political activator and community developer at Alert Bay on Cormorant Island, British Columbia, a mixed community consisting of non-Natives and Kwakwaka'wakw Indians. She had married into the Native community and had served in various roles for the band council. She played a central advocacy role in the dispute that she describes.

The book centres on the tragically unnecessary death of a young Indian girl due to appendicitis. It is a passionate ethnography (a term used originally by the late Jules Henry) which vividly shows the effects of this death on the child's extended family and the community as a whole. That many Indian children die tragically does not lessen the pain of any particular instance for Native people. In this case the death was due to the negligence of an alcoholic doctor. As proven by a subsequent enquiry, two later deaths were also directly related to his negligence. But more than this, Speck shows that these incidents are not isolated but rather represent the substandard health care that Native people in Canada receive, a situation related to their colonized status.

Speck does not explicitly indicate her theoretical perspective; a political-economic one seems implicit and she handles it very well. In fact, one of the book's strengths is that it contains a well thought out anthropological perspective for social criticism without burdening the reader with the standard "genuflections" to literature reviews, conceptual operationalizations, and other overly academic "baggage." To do so would have taken away from the chronicle of the tragedy of Renée Smith's death and the portrayal of the injustices imposed by colonialism upon the Native people of Alert Bay. The types of data and literature used and the implicit theoretical

perspectives are still sound from my academic perspective. Her endnotes and bibliographies support that observation. Data consists of first-hand observations, descriptions of episodes, transcriptions from the several enquiries into the incident, newspaper reports and editorials, data from the ethnographic and historical literature, and other types of evidence such as epidemiological statistics.

In addition to demonstrating her excellent narrative skills, the author brilliantly encapsulates the essence of complex institutional systems. Examples of such writing include her summary of some of the complexities of traditional medicine (pp. 69-70) and the consequences of colonialist attitudes among professional health workers (pp. 99-100). She has the ability to summarize neatly significant far-reaching truths. For example, in reference to Renée Smith's older female relatives, she states that, "The Dick girls form part of that brigade of women who keep the Native community going" (p. 23). Those familiar with Native Studies know the powerful truth of that statement. The book offers many small lessons and insights, while maintaining the principal theme that Canadian Native people have suffered from a complex colonizing history, which has resulted in persistent yet subtle repressive attitudes about them among the majority of Canadians. These realities continue to result in substandard services to Native people in spite of the emergence of a potentially countervailing "racial liberalism."

I do not have any significant criticisms of this book. Some could argue that Speck should have provided direct recommendations for the improvement of health-care delivery. She may have avoided this in deference to Native leaders, who are charged with that task. As she points out, even the transfer of authority to Native people can have great risks, if it is piecemeal and is not well thought out. Others might suggest that the issues raised in the book should have been more directly analyzed in the context of the comparative literature on health and health-care delivery to Fourth-World peoples. Such a treatment might have been counterproductive, imposing a "stuffy" and involuted academic tone to a powerful piece of passionate but sound advocacy. My only serious suggestion involves the book's length. Two hundred and eighty-one pages is not overly long for an academic book. It may be too long to maintain the attention of policy-makers, politicians, and physicians treating Natives, groups that she presumably wants to influence. Given her superb writing ability, she surely could have produced a shorter version with similar impact.

The book has many potential contexts and uses. Students at all levels of anthropology, sociology, native studies, medicine and nursing, and the general public could benefit from it. Let us hope that some policy makers are reading it too! Finally, we so-called "established" and "professional" social scientists have much to learn from the book, especially in terms of effective communication and passionate commitment.

We Are Here: Politics of Aboriginal Land Tenure
Edited by Edwin V. Wilmsen
Berkeley: University of California Press. xii + 210 pp. $32.50 (cloth)

Reviewer: Bruce Cox
          Carleton University

"The notion of [foragers'] legitimate tenure rights in land," Edwin Wilmsen reminds us, "has only recently gained legal status, with severe restrictions and in a few countries only" (p. 1). *We Are Here* examines anthropologists' contributions to such gains in Canada and Australia, where some progress has been achieved, and in Namibia and Botswana, where it is urgently needed. The volume grew out of a conference, and the papers fit together better than conference proceedings usually do.

Let us begin with Canada, represented here by Harvey Feit and Michael Asch. Asch begins by explaining what Canadian Natives mean by aboriginal rights; these include a broad range of rights, by no means confined to land tenure. He explores the constitutional basis for developing such rights. This selection was whittled down from a longer work, and the operation was not entirely a success. Readers who wish to know exactly what he has to say concerning the means of protecting indigenous communities within the nation-state would be well advised to turn to his *Home and Native Land* (Methuen, 1984).

Feit writes about the James Bay and Northern Quebec Agreement — its background, provisions, successes and failures. The Agreement marks the Cree attempt to protect hunting rights in the face of hydroelectric megaprojects. At present, the Agreement seems to work passably well, although whether or not it and Cree hunting rights can stand up to the next spate of dam-building remains to be seen.

Two Australians, L.R. Hiatt and Kenneth Maddock, and an American, Fred Myers, provide lively accounts of the aborigines of Northern and Western Australia. Myers' piece shows that Pintupi ideas of ownership extend very widely indeed, to lands, sacred boards, cigarettes and motorcars. Hiatt takes up the Aboriginal Land Rights (Northern Territory) Act of 1976, which provides a forum for land claims. It seems that anthropology has affected the claims process and vice versa. Maddock deals with a similar theme. Is anthropology advancing, he wonders, through involvement in land claims? His answer is a qualified yes.

Robert Gordon, himself a native of Namibia, believes that the aspirations of the Namibian San run much beyond foraging. The San, he argues, would like to acquire grazing lands and cattle, but San aspirations may be overshadowed in the play of interests leading up to Namibian independence. Next we turn to a chapter on neighbouring Botswana, where, as the editor reminds us, "Europeans have no monopoly on dispossessing aboriginal peoples" (p. 2). Not a cheerful picture, but there we are.

The work covers seven authors, eight chapters and four countries, although the title seems to promise wider coverage. Nevertheless, for specialists in the places discussed the book gives good value.

To Work and to Weep: Women in Fishing Economies
Edited by Jane Nadel-Klein and Dona Lee Davis
St. John's: Institute of Social and Economic Research, Memorial University of
Newfoundland, 1988. xiv + 320 pp. $20.00 (paper)

Reviewer: Bonnie J. McCay
            Rutgers University

The cover illustration — an old etching showing Scottish women, their dresses
tucked high about their waists, carrying their men ashore from a fishing boat —
encodes this volume's themes: women as bridges to land-based community life,
women as carriers of physical and emotional burdens, women in multiple and
ambivalent relationships to men. The etching alone is a powerful symbolic chal-
lenge to several decades of anthropological research on fishermen and fishing com-
munities, during which the topics of women's roles and gender relations received
less than their full due. The essays collected in the book redress that neglect and add
rich data and valuable perspectives to the ethnology of maritime and coastal com-
munities. They are based on ethnographic and ethnohistorical work that ranges from
subsistence and artisanal fisheries production systems to commercial and industrial-
ized ones. They include research in communities of North America (Alaska, the
Pacific Northwest, New England and Newfoundland), South America (Peru and Bra-
zil), Europe (Portugal and Scotland), India, Africa and Southeast Asia (Malaysia and
Indonesia).

The editors' introduction and chapter on the literature place the case studies in
thematic and intellectual contexts while giving a nearly exhaustive review of prior
work on women in fishing and coastal communities in relation to major questions in
gender studies. The 11 ethnographic case studies cover a wide spectrum of
approaches, ranging from holism and status/role analysis to currently more fashion-
able attempts to bring both history and ideology into analysis. In addition, the ques-
tion of power is dealt with explicitly and throughout, capped by M. Estellie Smith'
summary chapter.

The book includes some ethnographic gems that are often enhanced by a focus
on particular situations and people, such as Robben's portrayal of the strained and
often humiliating conjugal relationships of lower-class Brazilian fishermen. Others
are Cole's report on a Portuguese community where women were active in fishing
for over a century, Gulati's collection of transcribed biographies of Indian women
affected by an Indo-Norwegian fishery development project, and Clark's study of
two Sicilian-American women who lead a powerful fishermen's wives association in
Gloucester, Massachusetts.

The editors did a fine job of bringing together these and other essays, including
their own, in a book that will become a classic in maritime anthropology. The book
also has the merit of being inexpensive and thus suitable for classroom use; happily,
the editors of the Institute of Social and Economic Research not only designed the
book well but also chose to issue it in paperback. In addition, the book is very
important to anthropologists and others engaged in women's studies: the question of
women's status, roles, and relationships with men in settings frequently character-
ized by the division of labour is not at all unique to fishing communities, although
they provide excellent ways to study it.

Coming of Age in New Jersey: College and American Culture
Michael Moffatt
New Brunswick, New Jersey: Rutgers University Press, 1989. 345 pp. $35.00
(cloth), $12.95 (paper)

Reviewer: Norm Sheffe
            St. Catherines, Ontario.

Though noting that "in cultural anthropology, your professional prestige depends on how distant, exotic, and uncomfortable your research site is" (p.1), Professor Moffatt opts for a familiar, comfortable site where he can practise his art, Rutgers College, or more specifically, the undergraduate dorms and classes of the State University of New Jersey.

Using the techniques of the cultural anthropologist, he examines patterns which are, on the one hand, unique in time and place and, on the other, applicable to many undergraduate populations in North American colleges. Working from the mid-1970s through 1987, Moffatt supplemented participant observation in college dormitories with questionnaires, audio-taped conversations, and autobiographical papers from his Cultural Anthropology classes. In a reflective mood, Moffatt observes:

> My overall feeling is that educationally Rutgers is not doing all that badly by its undergraduates. This judgement is only possible, however, if one cuts away much of the customary rhetoric about higher education and looks at the actual social structure of American public universities in the late twentieth century — and at the larger American culture (and economy, and polity) in which colleges and universities are embedded — more realistically. (p. 310)

The basic point of *Coming of Age* is that the culture of Rutgers undergraduates originates in American mass-consumer culture. One is led to ask some questions: have the critics of post-secondary education carefully considered the impact of a whole cultural ambience on their institutions, rather than the usual litany of impoverished school systems, poorly prepared teachers, televisions or anti-intellectual home environments? The undergraduate, imprisoned in the adolescent mass culture, may be evolving towards something ethically higher. Despite the popularity of degrees in Business Administration (economics being the overwhelming first choice for a major at Rutgers) which witnesses rampant vocationalism in higher education, the burgeoning interest in business ethics on campus may be a welcome sign. But Moffatt, the social scientist, reports. He does not editorialize.

The focal point of the study — coming of age — is stressed by the inclusion of two chapters out of seven devoted to sex in college. The subject is somewhat fudged, since it is apparent that in many ways, many, perhaps most of these *children* came of age before they matriculated. However, Moffatt provides the reader with careful definitions, descriptions and discussion of social relationships. The categories friend, friend*ly*, close friendships, and intimate and non-intimate closeness are scrutinized and discussed at some length.

If you are a good, normal American human being in the 1980s, you should be ready, under certain unstated circumstances, to extend friendship to any other human being regardless of the artificial distinctions that divide people in the real world. To be otherwise is to be something other than a properly egalitarian American; it is to be "snobbish"; it is to "think you are better than other people". . . . They know that the correct response to a friend*ly* How are you? is Fine or Not Bad; only with a true friend do you sit down and talk for half an hour about how you are actually feeling at the moment. (p. 43)

Moffatt's remarks remind one that the emphasis on friend*liness* in American life has been remarked on by visitors almost from the earliest days of the new nation. The intrusion into daily speech of remarks designed to demonstrate the amicability of human contact is one more example of speech patterns imposed on social intercourse by strategists of hucksterish, market-wise purveyors of the happy face school of friend*liness* — Have a good day.

The occupants of the freshman dorms at Rutgers are usually initiated into the rituals of these social ploys back in high school, and proceed to refine them, not without some soul-searching. Dilemma: do I smile and/or say "Hi" to a face seen occasionally in my Psych I class of 600? Do I nod, and walk on? Should I use a formula phrase? "Nice day, isn't it?" or will this seem too friend*ly*? Context solves some of these difficulties: people on your dorm floor deserve a ritual greeting, roommates something more, and close friends much more. Sex partners . . . well that can be worked out.

Moffatt has written *Coming of Age in New Jersey* in a popular, readable style. He has omitted the full panoply of scholarly citations, annotated bibliography, stylistic pretentiousness and the disfiguring rash of social science jargon. It is fair, therefore, to infer that he and his publisher have aimed for the general market of intelligent non-fiction readers. He has included end of chapter notes, titled "Further Comment" which are useful and attempt to make up for the occasional truncated discussion of promising issues. Given the general focus of the book, there are several points that could have been illumined for the hoped-for readership. One in particular that would have been useful is an organized discussion of the class structure at Rutgers. There are scattered comments here and there in several of the chapters, and, indeed, the chapter on Race covers part of the ground, though it is concerned with a particular example of socialization and friend*ly* relations.

Moffatt's handling of the historical background of adolescent college culture is more successful. Recent developments which some consider to have reached crisis proportions are put in perspective. This is exemplified in his discussion of the shift from an *in loco parentis* status for college authorities to peer control over sexual behaviour. In the chapter on Race he points to the rather wry decision to name the dorm floor where Blacks were to be accommodated as Robeson, "named for the most illustrious alumnus in the history of the college, black or white," quite literally domesticating the legacy of one of the century's leading rebels who became an exile from his own country. The details of Robeson's career are contained in a footnote. A passing reference to the changing centre of gravity for the role of professor from teacher to researcher, and the consequences for education, may enlarge the understanding of the intelligent public with regard to the vexing question, "Why can't Johnny read the newspaper intelligently?"

The study provides a wide range of cultural elements, artifacts and activities

for discussion. Of significance is the frequently ignored truism that students are "becoming" adults. The first word in Moffatt's title is essentially a "present imperfect," and reminds us of the process of development at the heart of the college experience. The dejected comments of one student reflecting on the beginnings of that coming-of-age are both pointed and poignant: "I found myself intimidated when I began at Rutgers because all the students I was meeting seemed very intellectual . . . I found myself with intelligent thoughts behind a very weak vocabulary" (p. 299).

It would be unfortunate if *Coming of Age in New Jersey* fails to reach its projected readership. It offers a fascinating glimpse into student life. Moffatt's insights into contemporary culture are always apt. For example, consider his comments on the freshman understanding of the concept of culture as described in the chapter on Race, where he tells us that students'

> working concept of culture is not especially deep or sophisticated. Notably missing from it was the idea that culture could fundamentally determine modes of thought and deeply influence behaviour, or that it was relativistic in any sense more profound than one person's having a taste for one leisure activity and another for a different activity.
>
> *Anthropologist:* What different types of people have you noticed here at Rutgers so far?
> *Freshman Female (Sept. 1978):* Well, I've noticed a lot of people here are into Frisbee. Is that what you mean? (p. 153).

A Victorian Missionary and Canadian Indian Policy: Cultural Synthesis vs Cultural Replacement
David A. Nock
Waterloo: Wilfrid Laurier University Press, for the Canadian Corporation for Studies in Religion/Corporation Canadienne des Sciences Religieuses, 1988. x + 194 pp. $14.95 (paper)

Reviewer: Elizabeth Graham
            Wilfrid Laurier University

This book examines three phases of E.F. Wilson's lifework — as missionary, school principal and amateur anthropologist — with detailed descriptions of the background influences upon him in each.

In 1868 E.F. Wilson arrived at the Sarnia Reserve on behalf of the Church Missionary Society (CMS). Nock explores the aspects of Wilson's personality and strong family association with the Evangelical Movement in the Church of England that led him to take this step. In Sarnia, Wilson intended to follow the policies of Henry Venn, of the CMS, who strongly advocated cultural synthesis (i.e., a people's borrowing selected items from a dominant culture and merging them with its own). He was to organize a Native Church which would then be run by the Natives themselves. But he found himself in a community with a well established Methodist Church, and nothing worked quite the way it was supposed to. Nock assesses Wilson's work at Sarnia as a failure and takes Wilson to task for not implementing Venn's plans, for fighting with the Methodists and for ignoring Native government.

After two years Wilson moved to Garden River and, in 1871, based on schemes of cultural replacement (i.e., strategies in which the dominant culture

attempts to change all aspects of a weaker society), founded the Shingwauk and Wawanosh residential schools for Native children. An intensive program of education and cultural change is described, but, according to Nock, Wilson was not able to keep the children at the school long enough to have any lasting effect.

During his tenure as principal of the schools Wilson began to study Indian groups. Nock describes Wilson's correspondence with some of the leading anthropologists of the day, particularly the influential Horatio Hale. Returning to a perspective of cultural synthesis, Wilson founded two journals, *Our Forest Children* and *The Canadian Indian*, and wrote articles for them describing various Indian groups he had visited and studied, and several philosophical treatises on Native autonomy. The journals did not last, and Wilson's attempts to hold conferences to help Native people become independent were met with distrust by Native leaders.

The title makes reference to a missionary. A more apt title for this book might be "The World of E.F. Wilson." Less than half of the book concerns Wilson directly. Rather, this interesting and readable work provides a many-faceted exploration of the intellectual climate of the age and of Wilson as a receptacle for the ideas of prominent Churchmen and Academics. Nock describes his work as a "case study of . . . how the policies and programs of one particular missionary illumine many important features of plans incorporating cultural replacement and cultural synthesis. . . . These are problems that bedevil Canadians to this day and, because this is so, Wilson's experience between 1868 and 1893 remains alive, fresh, and relevant" (p. 2). However, these claims appear somewhat specious since the book's actual message is that Wilson failed as a missionary and educator. His school was not appreciably different from other residential schools. Yet, Wilson represented ideas that were about 100 years ahead of their time, and his attempts to put them into practice were doomed to failure, and to understand our history it is as important to examine the active failures as the successes.

In his assessment of the work at Sarnia, Nock seems to underestimate Wilson's effectiveness. He does not mention that Wilson reported a unanimous vote from the Church members of the Sarnia reserve to set up a Native Church Fund and that, by 1871, he had Native catechists at Sarnia and Kettle Point and three young men studying to be catechists. Despite the inevitability of conflict with Methodists, after thirty years of political/sectarian strife, Wilson had plans for a joint school, and he was very aware of his dependence on the Indian Council. It is not clear how Nock decides that five years at boarding school is not long enough for cultural replacement or what value there is in figuring out an "average" length of stay.

The title also makes reference to Canadian Indian policy, but its relation to that policy is tenuous. Nock suggests that Wilson failed to have any significant affect on government policies. Further, Nock's view of cultural replacement and cultural synthesis as policies representing clearcut alternatives, risks oversimplifying the equation. Native people did not always have any effective choices about accepting changes which, if not forced, were nevertheless overwhelming. Lastly, the book contains some unfortunate phrasing regarding "levels of development reached by different groups of non-Europeans" (p. 52) and "societies that had already developed a state-level society" (p. 59).

CONTRIBUTORS/COLLABORATEURS

Jerome Barkow

Jerome Barkow is Professor of Anthropology (Committee of Human Development) at Dalhousie University. He received his B.A. from Brooklyn College and his Ph.D. from the University of Chicago. He has conducted fieldwork studies in Nigeria and Nova Scotia. His interests include psychological anthropology and the evolution of human behaviour. He is the author of *Darwin, Sex and Status* (University of Toronto Press, 1989) and numerous papers.

Charles D. Laughlin

Charles D. Laughlin is a Professor of Anthropology at Carleton University. His interests include symbolic systems and transpersonal anthropology. He has conducted research in biogenetic structuralism, a field in which he is a pioneer. He is the co-author, with E.G. d'Aquili, of *Biogenetic Structuralism* (1974); with I.A. Brady, of *Extinction and Survival in Human Populations*, and is also the editor of the *Neuroanthropology Newsletter*. He has a particularly strong interest in the anthropology of dreams and trance. His most recent book is *Brain, Symbol and Experience* (Shambala New Science Library: Boston).

Ron Messer

Ron Messer holds an honours Bachelor of Arts degree in Religious Studies from McMaster University as well as Master of Arts degrees in Religious Studies and Anthropology from Carleton University. He is presently working in an administrative capacity with the provincial government in British Columbia.

Nancy J. Schmidt

Nancy J. Schmidt holds a Ph.D. in Anthropology from Northwestern University. She has taught anthropology and is a bibliographer of anthropology and African Studies at Indiana University. She has been engaged in research on African film for some 10 years and is the author of the 1988 volume, *African Films and Film Makers: An Annotated Bibliography* (Munich: Sauer) as well as numerous papers.