

Cultures of War and Peace: A Comparative Study of Waorani and Semai

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INTRODUCTION

The explanation of human violence and war has, in recent years, come increasingly to occupy the attention of social and behavioral scientists. In anthropology, the most influential of the resulting theories have offered final cause explanations that focus on factors largely external to human consciousness and purposes: on adaptations to ecological parameters and on presumed biologically based propensities of one or another sort, especially the maximization of inclusive fitness.

This chapter presents some preliminary results of a research project that was designed to address one of the limitations widely acknowledged by both critics and supporters of these ecological and sociobiological hypotheses: their difficulties in accommodating human motivations, the proximate causes of human behavior (see, for example, Orlove 1980; Johnson 1982; Barkow 1984). The field research examined the motivational context of warfare in an Amazonian society, seeking to define the psychological and sociocultural contexts of warfare—the complexes of values, beliefs, attitudes and goals that constitute the motivational context within which violence and warfare were perceived as legitimate and desirable options, and the social forms through which they are manifested.

Assessing the significance of psychological and sociocultural factors independent of ecological and biological constraints presents a methodological problem that we have addressed by employing a comparative approach and two phases of research. The first phase was an intensive ethnographic study of the Waorani (more commonly known as "Auca"), a people of the Ecuadorian Amazon who, with a homicide rate of the order of 60% over the past several generations, are the most warlike society yet described (cf. Yost 1981). The field research was conducted during the period of January through December 1987, and concentrated on documenting the psychological, social, cultural, and ecological contexts of Waorani warfare. The second phase, which is now underway, involves the qualitative and quantitative analysis of these data against the comparative background of a similar body of data on the Semai Senoi, an aboriginal people of the Malaysian rainforest, data which we had previously collected during two field studies in 1973-1974 and in 1979-1980. The Semai are apposite for this

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comparison because their ecological setting—the physical environment and their technological adaptation to it—and important aspects of their social organization are remarkably similar to those of the Waorani, and yet violence, either among themselves or between them and outsiders, is virtually unknown. Controlled comparison of Semai and Waorani adaptations to their tropical forest milieu thus allows us to take advantage of one of the rapidly vanishing "natural experiments" in human cultural adaptation, a strategy often advocated but seldom realized in anthropological research.

DATA COLLECTION AND ANALYSIS

The collection and analysis of the data involved the following four operations.

Construction of a Model of Waorani Cultural Activities

This was based on data derived principally from generalized participant observation and from a daily activity survey. The survey consisted of a structured interview schedule in which every resident over the age of 5 years was interviewed each evening according to a structured format that included questions on activities undertaken, assistance and commodities given and received, the participants in these activities and interactions, the kinds and amounts of goods and services exchanged, and the receipt and expenditure of money.

This survey produced a body of systematic data on the material and behavioral aspects of daily life and on social relations: patterns of cooperation, sharing, reciprocal and nonreciprocal assistance, and so on, a body of quantitative data suitable for comparison with a similar corpus of data from our earlier studies among the Semai.

Construction of a Model of Waorani Social Relations

Genealogies were collected and kin relations defined for the residents of the two primary settlements where we worked, and these were extended to include residents of most of the other communities on the Waorani Reserve as well. Data from the daily activity survey yielded patterns of cooperation, reciprocal and nonreciprocal assistance, gift giving, and so on. Focused interviews provided information on the composition of raiding parties and the relationships among raiders and victims. We also examined the relations between residence groups and between the Waorani and the *cowodi*—Indian and non-Indian "foreigners." This included documenting the movements of individuals and households and the development of political leadership and processes growing out of the activities of cultural "brokers"—Waorani, missionaries, and members of other indigenous groups who are intermediaries in the continuing process of acculturation. These data, together with data derived from structured and unstructured interviews, the documentation of household composition and visiting, and of patterns of marriage and residence, are being synthesized to generate a model of the organization and content of significant social relations.

Construction of a Model of Waorani World View

The objective here is to derive the cultural beliefs, values and attitudes that inform individual motivational complexes. We gathered the data necessary to this operation by the application of several techniques that we had successfully employed in our earlier research on the Semai. Focusing our observations particularly on religious rituals and beliefs, ethnomedical beliefs and behaviors, gender definitions, sex-role behaviors, childhood socialization, and conflict, we employed participant observation, informal but focused interviews with informants, and other sources (e.g., attitudes and values expressed during the activity survey) to explore the assumptions, beliefs, values, and psychological orientations that underlay the warfare complex (cf. Robarchek 1977a, b, 1979b, 1986). In investigating conflict, we also collected and tape recorded numerous firsthand accounts of specific raids that directly involved members of the study groups either as perpetrators or as victims (and in some cases, both, when we were able to interview both the attackers and the victims in a particular raid). Most of this case material still awaits transcription and translation, but the limited analysis thus far completed shows this material to be a valuable source of data on attitudes, value orientations, and motivations directly related to warfare.

Comparison of Results of Above Operations with Comparable Semai Models already Derived

The objective of the previous operations was to provide us with a holistic but structured model of the interrelationships among psychological, social, and cultural constructions which, taken together, constitute the meaningful context within which Waorani were motivated to engage in warlike and aggressive behavior, a model which can be compared with a similarly structured model of the motivational context of nonviolence among the Semai (cf. Robarchek 1977a, 1979a, b, 1986, 1988, 1989, 1990). The ultimate goal of the project is, through the comparison of these models, to reveal the similarities and differences in their organizations, structures, and internal dynamics, in order to discover how the relations among these factors eventuate in the two diametrically opposed patterns of warfare and nonviolence that are characteristic of these two, otherwise very similar, societies.

The analyses and comparisons of these data are still in a preliminary stage, but even the initial comparisons reveal that, while the ecological settings, settlement patterns, technology, subsistence practices, kinship and social organizations (and presumably biology) of these two societies are remarkably similar, the psychologically and culturally constituted realities within which they make their lives are profoundly different. This paper compares these differing constructions of reality, focusing particularly on aspects of the world views and self-images of these two groups—especially their contrasting conceptions of the nature of human beings and the relationships among them—and explores the implications of these differences for their radically divergent attitudes toward human violence, and for the behaviours that these attitudes engender.

THE SEMAI

The Semai are among the most peaceful people known. Physical violence of any sort is extremely uncommon: adults do not fight, husbands do not beat their wives nor parents their children, and homicide is so rare as to be virtually nonexistent (see Dentan 1968, 1978; Robarchek 1977b, 1979b, 1986, 1989; Robarchek and Dentan 1987).¹

At the time of our first study in 1973-1974, there were about 13,000 Semai living in small, politically autonomous bands whose populations seldom exceeded 100, scattered along the deep rainforest-covered valleys that dissect the mountainous spine of the central Malay Peninsula. Each band occupied a well-defined territory—usually a segment of a small river valley or a segment of a larger one—with which it was identified: "they of the Sata' River," "we of the Lengkok River," and so on.

Although a great many changes have occurred in the intervening years, at that time many bands in the less accessible highland and deep forest areas still persisted in following a largely traditional way of life based on hunting and swidden gardening, although they were being increasingly drawn into the economy and politics of the Malaysian state. The ethnographic present in the description that follows refers to conditions that obtained in the Batang Padang district of Perak State in the early 1970s, when we conducted our first field study.

Subsistence is based on swidden cultivation, with dry rice and sweet manioc as the staple crops. Moving every few years to exploit mature forest, settlements cycle over their restricted territories in a 20-30 year rotation. Manioc provides the bulk of the calories, and both the leaves and tubers are eaten. Small quantities of corn, bananas, melons, eggplant and other vegetables are also grown, but these are of minor importance in the total diet. Horticultural technology is extremely simple—machetes, axes, and dibble-sticks. Native trees are also cultivated, especially *durian* and *petai*, and much of the fruit is sold to traders from the lowlands. This provides most of the cash income that is used to purchase parangs, axes, sarongs, tobacco, sugar and, ever increasingly, transistor radios, flashlights and all the other luxuries that are rapidly becoming necessities.

Animal protein comes from hunting and trapping of small game—rodents, birds, monkeys, and so on—using blowpipes and poisoned darts and a variety of small snares. Larger game such as pigs and deer are occasionally taken with spear traps or noose traps and now, more commonly, with shotguns. Game is not plentiful, so the available animal resources are intensively exploited: snakes, bats, lizards, turtles, snails, frogs, toads, all go into the cooking pots, and a variety of grubs and insects of various sorts are also gathered in season. Fishing with hooks and lines, traps, and poison is also important, especially on the larger rivers.

Aboriginally (and during our first field study) there was no use of alcohol or other drugs, and Semai traditionally feared and avoided the sensations of disorientation associated with any kind of intoxication (see Robarchek and Dentan 1987).²

Kinship is traced bilaterally, and the most important kin group is the ego-centered kindred, although a ramage-like unit also exists, possibly emerging as response to the development of kin-based territories as trade in durian and

petai to the lowlands has become increasingly important (C. J. Robarchek 1981). The kindred is a primary reference group that should be consulted in matters of importance such as marriage and residence changes, and that has the responsibility of overseeing ego's behavior and of supporting him in disputes. Fear of censure by the kindred acts as a major constraint on the behavior of individuals (Robarchek 1979a, 1986).

Marriage within the band is common, even preferred in some groups, although it is often precluded by the small sizes of bands and the incest taboo on marriages between those who share a grandparent, thus neighboring bands are linked by ties of kinship and affinity. Polygynous marriage occurs but is not common.

Residence is ambilocal, and residence units vary from single households scattered over a band's territory to hamlets where the entire band resides. With the exception of a few large villages that have resulted mainly from government resettlement schemes, populations of these settlements seldom exceed 100, and most are in the range of 50 to 75 people. Households often consist of two or more siblings and their spouses, or parents and one or more married children, but they often include more distantly related individuals (or even unrelated friends) and their spouses and children. Settlements move every few years, as available soil, game and other nearby resources are depleted.

Bands are politically autonomous and essentially acephalous, although each has a largely hereditary (and now government certified) headman. The headmanship has been strengthened by, if it did not originate in, the occasional necessity of dealing as a unit with the politically dominant lowland peoples. Within the band, the headman exercises some moral authority as spokesman for the group but his exercise of that authority is essentially limited to his own powers of persuasion (Robarchek 1979b). On the relatively rare occasions when community-level decisions are required, they are reached through protracted discussion and consensus (Robarchek 1979b, 1990).

THE WAORANI

In a notably violent part of the world—the western Amazon basin—the Waorani, called "Auca" (savage) by their lowland Quichua neighbors, were among the most feared. Until the late 1950s, there were no regular peaceful contacts with other groups, and they and their neighbors raided each other incessantly. They numbered only about 500 people and, unlike the surrounding groups, possessed no firearms. Nevertheless, their 9 ft palmwood spears and their well-deserved reputation for ferocity allowed them to maintain control over an immense territory, some 8,000 square miles of deep valleys and dense rainforest, from which they drove out or killed all who entered or attempted to settle. Like the Semai, they are linguistically and, to some extent, culturally distinct from the surrounding peoples. Their language (Auca) is apparently unrelated to any other in the region, and their enforced isolation was so complete that, at the time of the first peaceful contacts in the late 1950s, linguists could identify only two cognates with any other language (Peeke 1973).

Scattered over their vast territory in widely dispersed settlements, each

essentially an extended family band, they also raided each other almost constantly. Blood feuds and vendettas arising from past killings, quarrels over marriage arrangements or accusations of sorcery were a way of life, even among closely related bands. Based on extensive genealogies collected in the 1970s, Yost (1981) calculated that more than 60% of adult deaths over the past 5 generations were the result of warfare, 17% as a consequence of external raiding and 44% from internal feuding. The genealogies that we collected yielded comparable estimates for the precontact period. In the 1960s, after peaceful contacts had been established by a group of American Protestant missionary women, a reserve comprising less than 10% of the traditional Waorani homeland was established by the Ecuadorian government, and most of the Waorani were persuaded to resettle on it. Several bands still remain off the reserve, and at least one continues to resist all contact.³

Like Semai, the Waorani are swidden gardeners and hunters. They live in the dense equatorial rainforest on an uplifted and deeply dissected plateau that lies at the foot of the Andes at the headwaters of the Amazon in eastern Ecuador. Sweet manioc and plantains are the staple garden crops. The starchy fruit of the cultivated chonta palm also provides a substantial portion of the diet for several months of the year. All three of these staples are converted into liquids by boiling and mashing, and the bulk of the calories are consumed in this form. Small quantities of corn, peanuts, and other vegetables are also grown but are not of great importance in terms of the total diet.

Animal protein is provided by hunting small game—toucans, parrots, marmosets, monkeys, and the like—with blowpipes and poisoned darts. Large game such as peccary, deer, and tapir are hunted with spears and, increasingly, with shotguns. Game is relatively plentiful, even in the vastly reduced area of the reserve, and little use is made of the small animals and invertebrates that are so important for the Semai, although some large grubs and swarming leaf-cutter ants are collected as delicacies.

As was the case with the Semai, alcohol use was unknown aboriginally. Unlike surrounding groups, Waorani allow none of their drinks to ferment to alcohol. Manioc mash is allowed to sour for a day or two but is discarded when it begins to turn alcoholic. Also unlike the surrounding groups, there is no communal use of drugs, although the solitary use by sorcerers of *Banisteriopsis muricata* (a vine closely related to the *ayuhuasca* widely used in the region) is suspected and probably actually occurs. Similar use, by sorcerers, of a psychoactive fungus is also reported (Davis and Yost 1983).

Like the Semai, Waorani trace kinship bilaterally, but there is no all-encompassing kindred in the sense that it exists for the Semai: no group of kin who have significant obligations to and responsibilities for one another and who collectively constrain each other's behavior.

Bilateral cross-cousin marriage is prescribed. As with the Semai, postmarital residence is ambilocal, but prior to contact it may have been primarily uxorilocal (see Yost 1981). Polygyny was previously common but is discouraged by the missionaries and, while it still occurs, is much less common than in the recent past.

Traditionally, the Waorani lived in small hamlets, widely dispersed over their vast territory. Within this territory, there were four major, largely endogamous, regional subgroups marked by minor dialect differences, each occupying a portion

of the larger territory and hostile to all the others. While bonds of kinship and affinity link the members of settlements in a particular area, for Waorani these are as likely to be sources of conflict as of unity, and the component bands were usually hostile to many of the others within the subgroup as well.

Residence units, like those of the Semai, vary from single households to hamlets of a dozen or more family groups. One very large settlement of several hundred people has grown up around the village where Rachael Saint, one of the missionaries who made the first peaceful contact in 1958, has established her residence. This settlement—with an infirmary, church, school, airstrip, and resident population of inmarrying Quichua—is a center for increasing acculturation. The rest of the population is scattered over the reserve in smaller settlements of much the same size range as those of the Semai, i.e., generally fewer than 100 people.

Household composition is also very similar to that of the Semai, typically consisting of a group of siblings and their spouses or a couple and their married children. Traditionally, all would have lived together in a single large house, and a number of these communal households still exist. Until recently, each of these settlements would have been hidden from the others, but today a network of footpaths link the dispersed communities on the reserve. Increasingly, the traditional residence pattern survives within larger settlements as extended family house clusters—married siblings or parents and married children living in a cluster of nuclear family households.

In the past, settlements moved frequently (over ranges much larger than those of Semai settlements) to exploit new hunting and gardening territories and, especially, to escape retaliatory spearing raids. As feuding and raiding have ceased, settlements have become larger and more permanent. This stability has also been the result of the construction, in several settlements, of clearings where the small, single-engine planes of the Missionary Aviation Fellowship can land. These flights transport sick and injured Waorani and other Indians to the missionary hospital located off the reserve in Shell Mera. They also bring school teachers to several settlements, bring in occasional government officials, and carry small amounts of cargo, thus providing a major link to the outside world. Households still move within these locales as old houses deteriorate and sentiments realign. Additionally, most families have at least one secondary residence with associated gardens in another valley a day or so's walk from the primary residence. Single families or entire extended family groups move to these secondary settlements for periods ranging from several weeks to several months to plant and harvest their gardens, and to fish and hunt.

The larger settlements centered on the airstrips are mostly artificial aggregations, resulting from the resettlement process. They are composed of distantly related or unrelated extended families that traditionally would have constituted separate, widely dispersed, and probably mutually antagonistic hamlets. Within these aggregated settlements, the household clusters retain their autonomy. There is little or no sharing or cooperation among them, community-wide decisions are seldom taken, and very rarely does the community act as a unit. The Sunday meetings in the Christian settlements and the periodic banana-drinking feasts are virtually the only occasions when these aggregations constitute a social unit.

The isolated extended family residence pattern is still represented in the smaller

hamlets, but even there autonomy is the norm and family elders have but limited influence over the actions of their adult or adolescent kin.

Waorani settlements, like those of the Semai, are politically autonomous and essentially acephalous. There is no headmanship, even in the restricted sense of that institution among the Semai, although political leaders, many of them women, are emerging in the larger settlements where they act as "cultural brokers" in transactions with surrounding groups (see Yost 1981).

THE HISTORICAL CONTEXTS OF WARFARE AND NONVIOLENCE

As Spiro (1967) has shown, the explanation of any sociocultural phenomenon, and this includes warfare and nonviolence, must be at least in part historical, an explanation of the social and cultural contexts within which the phenomenon originally arose in the social group under investigation. In this case, that would require specification of the historical conditions that gave rise to these two patterns of peacefulness and violence. Unfortunately, and as is often the case, the historical data that would be necessary to explicate these origins simply do not exist for these two societies (but see Dentan (Chapter 10, this volume), for the kind of explanation that would be required and for a hypothesis persuasive in the Semai case).

In the case of Waorani warfare, we cannot say with any confidence how, when or why it came into being, since no reference to a group that can be unambiguously identified as Waorani occur before the turn of this century. Nevertheless, even though the historical record with specific regard to the Waorani is virtually blank, the history of the region provides some understanding of the context within which Waorani warfare must have arisen.

The Regional Culture of War

Raiding and warfare have long been endemic in the western fringe of the Amazon basin, and we can only speculate about the ultimate origins of this widespread culture of war. The earliest accounts, from the beginning of the Spanish colonial era and even before, describe the bellicosity of the inhabitants of the region. Inca attempts at colonization were repelled by the Jivaros and others, as were the early incursions by the Spanish. In 1599, many indigenous groups united to drive all Spanish colonists from the region, sacking their cities and killing the inhabitants (cf. Harner 1972).

In the nineteenth century, the rubber boom brought major dislocations and disruptions to the native peoples. Large numbers of Indians were enslaved to work as rubber collectors and were subjected to brutal mistreatment by the Europeans and their local henchmen. Epidemics of introduced diseases swept through the indigenous populations and the mortality was enormous. The haciendas established on the major rivers at the foot of the Andes utilized what amounted to Indian slave labor to exploit the region's resources, including the alluvial gold deposits in the Andean foothills, and the hacendados supported and encouraged intertribal slave raiding.

While it is clear that warfare in the region predated large-scale European contact, the level of violence was almost certainly greatly intensified by the exploitation of the region and its inhabitants during (and following) the colonial period.⁴ Moreover, differential access to the technology, especially firearms, introduced by the Europeans further exacerbated the conflicts and altered the power relationships among the various groups, encouraging some to press their advantage at the expense of others. It also presented additional incentives for raiding by the disadvantaged groups as they fought to obtain the new tools and weapons.⁵ At the same time, the physical environment counterbalanced, to some extent, the advantages provided by the new technologies. The dense forests and swamps, the difficulty of the terrain, the impossibility of maintaining supply lines, all worked to resist long-term incursions into hostile territory.

In such a situation, where warfare is endemic, a people's options are rather limited: they can either flee, fight back, or be overwhelmed. Given the sociocultural environment of the region (and with no safe refuge available), engaging in at least defensive warfare becomes a functional necessity for group survival. Warfare, under these conditions, is contagious; once one group adopts it as a tactic for advancing its ends, others must either take it up or be destroyed.

Thus, while the specific conditions that underlay the origins of the regional culture of war are largely lost in time, once begun, it took on a life of its own. In such a situation, where groups seldom had the absolute superiority in technological or other resources to defeat conclusively both the forest and their enemies—to kill their men, kidnap their women, capture their children, and occupy their territory—the result is predictable: a more or less stable balance of terror with constant raiding among the various social groups.

The Waorani Culture of War

Even in this violent milieu, the Waorani were legendary. Although vastly outnumbered, they regularly attacked neighboring groups to steal machetes, axes, and, occasionally, women. The surrounding groups also raided them for women, and for children who were taken to work on the haciendas that persisted in the Andean foothills until the middle of this century.⁶

Among related Waorani bands, hostilities frequently were precipitated by disagreements arising from the Waorani practice of bilateral cross-cousin marriage. These marriages were arranged by parents, often by one parent without the knowledge or consent of the other. Thus a father, who may have agreed to marry his daughter to his sister's son, might return to his house during a banana-drinking feast to find that, in his absence, the girl had been married to his wife's brother's son. In the absence of any institutionalized mechanisms for dealing with conflicts or resolving disputes, the anger and animosities generated often led to spearing raids.⁷

Witchcraft accusations and their aftermath were another common source of lethal hostilities. Since serious illnesses were infrequent, and since most of those bitten by snakes survived, a death from either of these causes was an abnormal event that required an explanation. The explanation that was almost certain to be offered was witchcraft, probably by a relative or a member of a related band

who had a grudge against the victim or his kin. The typical response was a retaliatory raid on the suspected sorcerer's household, the raiders bursting into the house at night and spearing the sorcerer and as many of his housemates—men, women, and children—as possible.

These killings, in turn, generated their own momentum, and long-term blood feuds developed between groups, motivated by the desire to avenge past killings. Following an attack, the raiders and their families would abandon their houses and fields and retreat into the forest to avoid retaliation. They would establish a new hamlet many miles away and several years might pass before a tell-tale footprint betrayed the location of the settlement to hunters from another band and led to a new cycle of killing.

The Motivational Context of Waorani Warfare

As we have seen, the historical record is insufficient to allow us to draw more than the most general conclusions concerning the origins of the Waorani warfare pattern. Even if that record were complete, however, accounting for the origin of Waorani violence would not be sufficient to explain its continued existence. We know that cultural patterns are far from immutable so, regardless of how a cultural complex came into being, any explanation of a perduring behavioral pattern must also account for how and why it persists through time. It is here that a motivational explanation is required, one that explores the cultural constructions of reality, the beliefs and values, and the psychological orientations that define the context of action within which individuals are motivated to engage in warfare.

This is the culturally constituted reality into which each new generation is born and which, through culturally patterned experience, penetrates to the very core of individual psychology. At the most fundamental levels, those of the perceptions of external reality and the attachment of meanings and significance to those perceptions, the processes are culturally informed. These systems of meanings, of values and beliefs, of symbols and significations, and the purposes that they define, constitute the definitions of reality within which human goals are generated and realized, and within which violence or nonviolence are seen as legitimate behavioral options in service of these goals.

Our objective here, by examining the similarities and differences in these two societies and exploring the relations of these to peacefulness and warfare, is to arrive at an understanding of the motivational context of Waorani warfare, its proximate cause.

COMPARATIVE ANALYSIS

In brief summary, the comparative analysis shows two societies strikingly similar in terms of their physical environments, their technological adaptations to them, and many aspects of their social organizations. But they are worlds apart in their cultural constructions of these realities—their fundamental conceptions of the nature of the world, and of human beings and their relationships to one another,

and to their environments—and in the attitudes, values and behaviors generated within these psychological and cultural contexts.

Similarities

Environments, Subsistence and Technologies

Both groups are interriverine swidden gardeners, hunters and gatherers, living at similar altitudes in equatorial tropical rainforest environments. For both, sweet manioc is one of their two staple crops. Both also cultivate plantains, bananas and a number of minor crops, including corn, and both cultivate forest trees for fruit. Gardening technologies—machetes, axes, and digging sticks—are virtually identical. Protein in both societies is derived from the hunting of small and large game. Hunters in both societies take the former with blowpipes and poisoned darts and the latter with spears and, increasingly, with shotguns. Fishing with lines, nets and poisons is also important to both.

Social Organizations

Social organizations, including political organizations, descent, and residence patterns, are also strikingly similar. Both are band-level societies consisting of largely kin-based residence groups of generally fewer than 100 people. These bands, in both societies, are politically autonomous and essentially acephalous. Among both groups a previous pattern of dispersed extended family households is now being replaced, as a result of external contacts, by nuclear family households and nucleated settlements. In both societies, however, the households were, and are, the basic economic units.

Descent in both societies is bilateral, with a resulting lack of "fraternal interest groups" (as defined by Otterbein 1980) in both. In neither are there significant structural features that cross-cut kin ties to bind individuals into interdependent groups.

Both societies are highly egalitarian, with few rank differentials of any sort. In neither society does gender entail a significant distinction in rank, nor are gender roles highly differentiated in either. With no strong sex dichotomies, there are no puberty rites, men's clubs, or other associations in either society.

Polygyny is permitted but infrequent in both. Socialization in both societies is indulgent and nonpunishing; both husbands and wives tend children, and children's relations with both parents are warm and affectionate.

Differences

Environment

In general, and contrary to the predictions of ecological theories of warfare that hold resource scarcity—especially protein—to be the crucial determinant (e.g., Harris 1974, 1979; Gross 1975; E. Ross 1978, 1979; Bennett Ross 1980), the Waorani environment is much more productive than that of the Semai. In the areas of the reserve where we worked, soils are more fertile, allowing longer use of fields and shorter fallow periods. Game is also much more plentiful, even though the human population is increasing, and the reserve where most of the Waorani

now live comprises less than $\frac{1}{10}$ of their traditional range (cf. Yost and Kelley 1983). The rivers are also, in general, larger and more productive. While our data on hunting and fishing productivity are as yet incompletely analyzed, it is already apparent that Waorani intake of animal protein exceeds that of the Semai by several orders of magnitude (and substantial quantities of smoked meat and fish are now exported to surrounding groups). As a consequence, Waorani do not bother to trap small animals nor do they utilize the snakes, frogs, lizards, and invertebrates that form a significant portion of Semai protein intake. Population density is also much lower among the Waorani; prior to the creation of the Waorani Reserve, Semai population density (4.1 per square mile) was approximately 68 times that of the Waorani (0.06 per square mile). Even now, on the reserve, Waorani population density is only about 1.1 per square mile, approximately one quarter that of the Semai.⁸

Semai also suffer from disease to a much greater extent than do the Waorani. Typhoid, cholera, tuberculosis, and a great many other diseases are all endemic in Southeast Asia and periodic local epidemics can literally decimate Semai settlements (one tenth of the band that my wife and I lived with died in a series of epidemics that swept through the band in the six years between our first and second field studies). Additionally, people are commonly confined for days or weeks at a time by less severe or chronic illnesses. Waorani, in contrast, are remarkably healthy. With the exception of dental problems, from which they (and the Semai) suffer terribly, they are seldom incapacitated by sickness.

The one exception to this picture of robust good health among the Waorani is snakebite. The Waorani have what may be the highest rate of snakebite mortality in the world—on the order of 5% (Larrick et al. 1978). Virtually every adult has been bitten at least once, and many two, three, or more times. Two serious snakebites occurred during our residence in the settlement where we did the bulk of our research.⁹ Both victims were given antivenin and survived (although one had to be evacuated by air to the missionary hospital). Recovery time for those who survive ranges from a few days to many weeks, and scarcely a day passes in any settlement without at least one close call with a poisonous snake.

The truly fundamental differences between Semai and Waorani worlds, however, are not to be found in the material realm of animals and plants, proteins and carbohydrates, soil fertility and pathogenic organisms; they lie rather in the cultural constructions of these realities and the social, psychological and behavioral implications of those constructions. Of special concern to us is the relationship of these constructions to the motivational contexts of violence and nonviolence.

World Views

The world views of these two societies, their cultural constructions of themselves and their environments could hardly be more different. Semai see themselves as essentially helpless in a hostile and malevolent universe that is almost entirely beyond their control. Their world is populated by a vast variety of supernatural beings, the great majority of which are actively hostile to human beings. The forest world surrounding a Semai settlement is a world of unremitting danger, of violently malevolent beings and forces virtually all of which prey on humans. People are reluctant to venture alone into the deep forest away from the settlements, and no

one in his right mind would spend a night alone there (sleeping alone in the forest is, in fact, seen as a primary symptom of psychosis). Nearly every element or activity, no matter how seemingly mundane or innocuous, has the potential to bring disaster and death. Imitating a bird call may bring an attack from a forest spirit who shoots illness-causing projectiles with his blowpipe; a child playing with a blackened pot may bring an attack by a thunder-spirit; discarding an empty bottle can cause a child's belly to swell. Even children playing with or laughing at the most harmless creatures—dragonflies and butterflies—will provoke an attack by Ngku, a thunder spirit who attacks with wind, torrential rain, and landslides. In this world of ubiquitous dangers, even the most ordinary activities—gardening, firewood gathering, hunting, eating, even children's play—are hedged by taboos and circumscribed by rituals in an inevitably vain attempt to ward off the dangers that constantly menace without (Robarchek 1977b; 1979a, b; 1986, 1988).

Waorani, on the other hand, live in a very different world, one which carries little danger beyond the human threats of witchcraft or a spearing raid. The surrounding forest itself holds no terrors; it is a world to be exploited. Lone individuals go off for days at a time to hunt and fish, or just to wander. There are few animistic beliefs, little concern with "supernatural" beings, and few taboos or rituals designed to ward off danger. The taboos that do exist seem to be rather lightly held; there were, for example, taboos on the eating of certain animals, most notably deer, tapir, and collared peccary, but these were quickly abandoned when the acquisition of dogs and shotguns made it possible to hunt them effectively. Taboos on giant catfish and other large river fish have similarly been abandoned as utilization of the larger rivers has increased since contact (cf. Yost and Kelley 1983). Compared with Semai, there is little emphasis on magic; there is little need for it since they see their knowledge as fully adequate to their tasks. They are, in general, a thoroughly confident and pragmatic people living in a world that they feel fully equipped to deal with and control.

Semai and Waorani perceptions of themselves and their relationships to the world and to their kin and community are similarly divergent. Semai see themselves as helpless in a malevolent world entirely beyond their control. The only protection from this danger, the only source of security and nurturance lies in the band, that group of a hundred or so human beings with whom one's life is bound up from birth to death. Without the support and nurturance of this group, no individual can survive. Anything that jeopardizes its cohesion is intolerably threatening to individuals, calling into question the only force that holds the world's malevolence at bay. Paramount cultural values stress sharing and non-aggressiveness; dependency and nurturance are major cultural and psychological themes and individual values. To be given nurturance by the community is to be given life itself; to have it denied is to be left exposed to the dangers that menace from without, a message that is constantly stressed and reaffirmed, both directly and symbolically (Robarchek 1979a, b, 1986, 1988; Robarchek and Robarchek 1988).

Waorani self-image, in contrast, is highly individualistic and autonomous; both men and women are expected to be self-reliant and independent, and they see themselves as such. While there is sharing among close kin, especially parents and

children and real and classificatory siblings (parallel cousins), every person's survival and well-being is ultimately his own responsibility. Women give birth alone and unattended, and snakebite victims are sometimes left in the forest to fend for themselves. Until recently, the elderly were not infrequently speared to death by their own kin when they became a burden (we have several accounts of the spearings of old people by their own grandchildren) (cf. Yost 1981). In the event of a raid, all fled for their lives, men often abandoning their wives, and women their children (Robarchek and Robarchek 1988).

Social Relations

These differences in the cultural conceptions of the relationships of individuals to one another are clearly reflected in the content of social relations in these two societies. Although kinship is traced bilaterally in both, there are important differences in the ways that kin are classified, and in the social implications of those classifications. Thus, despite the many similarities in kinship and social organization, the psychological and behavioral contexts that these define are profoundly different.

Semai terminology is of the Hawaiian type; thus terminologically—and to some degree socially—both cross and parallel cousins are classed with siblings (and the incest taboo forbids marriage between any of these people). This creates, for any individual, a large and symmetrical kindred, with the relations of all those in the same generation conceived (ideally, at least) in terms of the obligations and responsibilities of siblingship (see Robarchek (1979a, b, 1989) for examples of this cultural ideal). Coupled with the Semai perception of the group as the sole locus of nurturance and security, the result is a strong sense of group consciousness on two levels: the kindred and the band.

The primary group orientation is toward the bilateral kindred. These are the people who have primary responsibility for one's well-being, for providing assistance in case of illness or injury, for summoning the spirit familiars in times of illness, and for coming to one's defense in disputes. Since these kindreds are ego-centered, any individual is a member of many different kindreds; obligations and responsibilities are diffuse and cross-cutting, and these ramify to encompass the entire band and beyond, since the taboo on cousin marriage forces intermarriage between bands, expanding kindreds into neighboring bands as well.

In any conflict, either within or between bands, the kindreds of any two opposed individuals will likely include people who are members of each other's kindreds. Given the powerful affective salience of kindred and band, this minimizes the possibility of the band splitting into antagonistic mutually exclusive factions, and it provides a powerful motive for resolving disputes in ways that are as equitable as possible for all concerned (Robarchek 1979b). It also makes the prospect of open conflict within the band extremely threatening for all involved, both because it disrupts the relations of individuals to their kin and because it thus threatens the unity of the group, the sole source of security in a hostile world. Thus any individual who becomes embroiled in a dispute can expect to be reprimanded by his own kindred if he is found to have any fault in the matter, a prospect that is threatening in the extreme to most people (cf. Robarchek 1986). Kinship terminology reinforces siblingship as the central metaphor for relations

within the band. "We are all siblings here and we take care of one another" is a constantly reiterated ideal (see Robarchek 1979b, 1986, 1989).

The analogues, in the supernatural world, of these protective kinsmen are the *gunik*, the familiar spirits who have come in dreams and asked to become members of the dreamer's family. They can be called upon in times of sickness and danger, to ward off the attacks of *mara'*, the malevolent spirits that cause sickness and death. These *gunik* are incorporated into the kinship system, becoming siblings of the dreamer's children, the uncles and aunts of his grandchildren, and so on. The songs that summon the *gunik* are passed from generation to generation until, after several generations, parents' and grandparents' *gunik* become, in the generational terminology of the Semai, grandparents to most of the people in the band. They become *mai mana*, "the old ones," responsible for the welfare of the entire community, protecting it from the attacking *mara'*.

Every year or so, the ties between the entire band and its spirit protectors should be reaffirmed in a three-night ceremony to which all the *gunik* are called, and during which individuals dance into trance as they are possessed by the returning *gunik*. These spirit kin symbolize and express the unity and interdependence of the band, and any human discord at this time, or at any other time when they have been called into the settlement, will offend and anger them, leading them to abandon their human kin to the malevolent forces without.

Thus, although the formal features of social organization provide little basis for group integration, Semai world view motivates a powerful affective concern with interdependence and group cohesion. This is evidenced in the extreme reluctance of individuals to become involved in disputes, and in the formal dispute-settlement procedures that are immediately called into action when any conflict emerges into general awareness, a process whose objective is less the attribution of fault than the restoration of amicable relations between the disputants and within the band as a whole (Robarchek 1979b, 1990).

Waorani social structure, like that of the Semai, provides little support for group orientation but, in contrast to the Semai, Waorani culture also provides few bases for social solidarity, little sense of group-consciousness and little concern with group cohesiveness beyond the extended family.

In many societies where there is intense external warfare, internal solidarity is promoted and mechanisms exist to restrain conflict within the group so that a united front can be presented to the outside (e.g., Murphy 1957). Among the Waorani, however, no such social or cultural mechanisms exist. With bilateral kinship, there are no lineages or clans to provide a framework for mutual obligations and support. Even the kindred is attenuated; Dravidian kinship classification and cross-cousin marriage split the kindred into classificatory parents and siblings on the one hand, and potential spouses and affines on the other, the latter being those with whom conflict is likely to occur. With no strong sexual dichotomy, there are none of the men's clubs or men's houses, so important in many other Amazonian societies, to bind individuals into interdependent groups. For the Waorani, every kindred, and in the final analysis, every individual, is an independent entity (Robarchek and Robarchek 1988).¹⁰

As is true for the Semai, the human world is mirrored in Waorani conceptions of and relations with the supernatural, but the image reflected and sustained is a

very different one. No spirit familiars come in dreams to offer protection or assistance to their human kin. *Wengongi*, the creator who set the world in motion, has no significant role in human affairs, and human actions are thus not contingent upon or constrained by more powerful beings or forces.¹¹ With no tutelary spirits and few animistic beliefs, there are no communal rituals or responsibilities linking people together. With the exception of witchcraft, there is little concern given to the "supernatural." Even here, although the witch may use magical animal familiars to work his evil, the active malevolence is individual and human, and the response to it is likewise individualistic, pragmatic, and violent.

Social Control

The possibility of violent behavior by individual Semai is heavily constrained by individual and cultural values that stress nonviolence, and by the internalized need to avoid any disruption in relations within the kindred and band. When conflict does occur, social mechanisms are immediately brought into play to defuse it (Robarchek 1979b).

Among the Waorani, there are no such cultural or individual values nor is there a concern with group cohesion, and thus there are no comparable internalized controls on conflict and violence. Moreover, no institutionalized mechanisms exist for the resolution of disputes and the restoration of amity. Nothing comparable to the Semai kindred exists, in the sense of a primary reference group that acts to constrain individual behavior. There are thus few constraints, social, cultural, or psychological, on the actions of individuals.

Individual autonomy is the norm and, even within the extended family, elders have but limited influence over the actions of their kin. All this is well illustrated by a case—not atypical—described to us by an eye-witness, in which three young men—brothers and classificatory brothers—killed their paternal grandmother, bursting into her house and spearing the old woman in her hammock. Their father was furious at the killing of his mother, but did nothing. "What could he do?" our informant observed, "they are his sons."

In such a cultural, social, and psychological context—with no emphasis on nonaggressiveness, with no social bases for the creation of mutual-interest groups or the suppression of self-interests, with few obligations among individuals, few integrating social mechanisms, little expectation of or interest in group cohesiveness, and no mechanisms for resolving disputes—the conflicts that are inevitable in any society, and the anger and hostility that they can engender, were given free rein. Given the pre-existing culture of violence into which each generation was born and enculturated, any dispute was likely to escalate into a killing which, in turn, called for endless retaliation.

The End of Warfare

Occasional spearings, although very infrequent, still occur among those Waorani living on the reserve, but the large-scale raiding within and without has ended. Understanding how this came about provides some important additional insights into the dynamics of warfare in this society and argues strongly against the ecological and biological theories that have dominated recent discussions of warfare in these kinds of societies.

When the first missionaries appeared as mediators between hostile groups, most Waorani were surprisingly willing to cease raiding, once they were convinced that the other groups would do the same. This transition is even more remarkable in that it occurred, at least in its initial phases, in the absence of other major changes, either inside or outside of Waorani society. There was no military conquest, social organization had not changed, and the ecological situation had not been altered. The killing stopped because the people themselves made a conscious decision to end it.

It is important to emphasize that the Waorani were not conquered, nor were they coerced into giving up warfare. The missionaries (and there were never more than a half-dozen in residence, all but one of whom were women) made the ending of warfare their highest priority, but they had no way of enforcing this goal, since they were completely without coercive authority. No troops or police were on call; the region was and is essentially beyond Ecuadorian political and military control. For the missionaries to succeed in their objective, the Waorani had to be persuaded to give up internal feuding and external raiding.

Our informants recounted how, on many occasions, Waorani themselves had tried to reduce the intragroup feuding. Individual bands had sought to make peace with their enemies, only to see their efforts fail when some long-standing grudge or newly aroused suspicion led one or another individual or group to violate the truce. Lacking were any social mechanisms either to allow initial peaceful contacts between enemies or to permit the growth of trust. There were also no social mechanisms for dealing with conflict in the service of social cohesion, nor were there cultural values promoting peacefulness. Instead, there was a world view and a value system that promoted autonomy and individualism, and that demanded blood vengeance.

What the missionaries provided were a means for establishing peaceful contacts (mediated by their technology), a new view of a world in which not all outsiders were implacable enemies and cannibals, an alternative value system that stressed nonviolence and, perhaps most important, a glimpse of a world without constant fear of violent death. One by one, over a period of several years, new groups were located from the air and, for several months, flights dropped gifts-tools, food, clothes and so on. Through loudspeakers, Waorani from contacted groups spoke to their hostile kinsmen, promising an end to the vendettas until, finally, contact could safely be made on the ground. (This was not always successful, however; the first Waorani who attempted such a contact was killed almost immediately (cf. Wallis 1973)). Still, once bands became convinced that the feuding could stop, their commitment to ending the killing (buttressed among most, but not all, individuals and groups by some of the Christian values stressed by the missionaries) became a goal in its own right, one which superseded the desire for revenge (cf. Yost, in Anonymous 1980).¹²

Social mechanisms for resolving disputes are still largely lacking, but the commitment to avoiding a return to the old pattern has become so strong a value in its own right that even when a spearing does occur there is no retaliation. When a group of young men speared an old woman to death several years ago, the woman's daughter, the politically most powerful woman on the reserve, refused even to acknowledge that her mother had been murdered. The old woman's

brother, himself a renowned killer, said recently "In the old days, I would have killed them all by now, but we don't spear any more."¹³ Our informants unanimously stressed their relief that the cycle of killing has come to an end. This commitment, for its own sake and on the part of the Waorani themselves, to end the killing is also evidenced in the fact that several bands on and off the reserve, whose members do not see themselves as Christians, have also given up raiding.

Once the initial peaceful contacts were established, of course, many other inducements quickly came into play. As raiding declined and peaceful contacts with the missionaries and with surrounding indigenous peoples increased, Waorani began to acquire the material goods and other products of the outside world—iron tools, shotguns, flashlights, new foods, snakebite antivenins, medical care, and so on—that their long isolation had denied them. Also, the intensity of the hostilities had left many bands without access to potential spouses of the proper kin type, and peaceful contacts with formerly hostile bands provided new marriage possibilities with former enemies (cf. Yost 1981). Increasing desire for continued access to new marriage partners and to trade goods and services certainly reinforced their commitment to ending the violence, but the speed with which the transformation from violence to peacefulness occurred, as each new group was contacted, can only be explained as a consequence of the Waorani consciously striving to achieve what they themselves wanted to do: end the killing. When the opportunity presented itself, they seized and implemented it.

DISCUSSION

This brief comparison of Semai and Waorani, provisional and incomplete as it is, nevertheless casts serious doubts on the adequacy of the most prominent current anthropological theories of violence and warfare.

Regarding the ecological-functional approaches, the "techno-environmental" (Harris 1968) circumstances of these two societies are virtually identical, and where they differ in terms of variables proposed as significant by ecological hypotheses—e.g., resource (especially protein) availability or population densities—the differences are precisely the reverse of the predictions of these hypotheses.

Sociobiological explanations fare little better. In proposing a sociobiological "theory of tribal violence," Chagnon argues that "reproductive variables must be included in explanations of tribal violence and warfare" (1988:985). In the Waorani case, however, it is difficult to see how any functional explanation, sociobiological or ecological, could be advanced, since the level of the violence—the functional dependent variable in all of these hypotheses—was so intense that it threatened the very survival of the society (with a 60% homicide rate, there were only about 500 Waorani left alive at the time of contact; since then, the population has grown dramatically). The Waorani themselves clearly recognize the effects of the warfare pattern: "We were down to almost two people," one veteran of many raids told us. "If it hadn't been for Nimo and Dayume (Rachael Saint and her first Waorani convert) we would all be dead by now."¹⁴

A more fundamental problem with these and many other of the current

approaches to the explanation of warfare (and of human behavior in general), is that they entail a conception of human beings not as active, but as *reactive*, responding mechanically to biological or environmental (or sociological, cultural, or psychological) determinants (cf. Robarchek 1989, 1990). The comparison of Semai and Waorani, so strikingly similar in terms of their ecological situations and, presumably, their biological propensities, but so different in their behaviors, argues that human behavior is not a determined response to an "objective" reality, either ecological or biological.

Biology and the environment are most certainly relevant; they impose constraints upon and provide opportunities for the generation and realization of individual and social goals, but those constraints and opportunities are heavily conditioned by other levels. The worlds with which human beings interact are cognized worlds. Psychological and cultural information structures mediate between biological and environmental constraints and opportunities, and individual and collective behavior; they construct the realities within which purposive action takes place. The motivations of individuals and groups are not the self-evident stimulus-response reactions of a universal human psychobiology to an objective external reality but, rather, are generated in the appraisals and interpretations of situations, largely in terms of culturally given meanings (cf. Ross 1986a).

Understanding human behavior, including violence and nonviolence, requires putting the material "facts" into psychological, social, and cultural contexts, and attempting to comprehend how situations are conceptualized by the people involved. Semai and Waorani decisions, and the actions that flow from them are not incidental epiphenomena; rather, in the aggregate they *constitute* these diametrically opposed patterns of nonviolence and violence.

To return to Spiro's observation that causal explanations must account for both the origin and the persistence of sociocultural phenomena, the Waorani case shows that, whatever the historical origins of warfare in societies such as these, neither ecological adaptation nor inclusive fitness maximization is, in itself, sufficient to account for the persistence of warfare in Waorani society since, in the absence of changes in these areas, individual bands of Waorani abandoned warfare in a matter of months after contact, and virtually the entire society changed, in little more than a decade, from the most warlike yet described, to one that is essentially peaceful.

The fact that, after generations of warfare and raiding, they were persuaded almost overnight to abandon it suggests that an internal psychocultural dynamic was crucial to the maintenance and continuation of the pattern of endemic warfare. The pattern changed when new cultural knowledge—new information and new perceptions of reality—allowed the formulation of new individual and cultural values and goals. People responded by choosing courses of action based on what they wanted from this new reality.

This study thus argues for a perspective that sees people not as passive ciphers pushed this way and that by determinants external to their own consciousness, but as active participants in their own destinies, as purposeful decision-makers in pursuit of particular goals and objectives. They pick their ways through fields of options and constraints in pursuit of individually and culturally defined goals

within culturally constituted realities that they themselves are actively constructing and reconstructing.

SUMMARY

This chapter presents preliminary results of a comparative study of peacefulness and warfare in two tropical forest societies. The Semai of West Malaysia are perhaps the most peaceful society known, and the Waorani of the Ecuadorian Amazon, with a homicide rate on the order of 60% over at least the past five generations, are the most warlike people yet described. While these two societies are at opposite extremes on a continuum of violence, they are nevertheless very similar in a great many other regards. Their ecological settings and their technological adaptations to them are virtually identical. Both live at similar altitudes in upland interriverine territories covered by dense equatorial rainforest, and subsist by swidden gardening of manioc and bananas supplemented by hunting, fishing, and gathering. Subsistence technologies are virtually identical: blowpipes and poisoned darts, spears, machetes (and, increasingly, shotguns), axes, digging sticks, nets, lines, and fish poisons.

The ecological differences that do exist are the opposite of those predicted by current ecological theories of warfare that see resource scarcity, especially of protein, or the need to limit populations as the crucial determinants. The Waorani environment is much more productive than that of the Semai: soils are more fertile, fish and game are much more plentiful, and Waorani population density in the precontact period was roughly $\frac{1}{68}$ that of the Semai.

Social organizations are also remarkably similar. Both are band-level societies, politically acephalous, with no significant distinctions in rank. Both are sexually egalitarian and neither has men's clubs or other associations. Both trace kinship bilaterally, and bilateral kindreds are the central structural elements in both. In neither are there significant social structural features that cross-cut kin ties to unite kindreds into interdependent groups. In both, polygyny is permitted but infrequent, the nuclear family is the minimal political and economic unit, and socialization is indulgent and nonpunishing. Biological differences, presumably, are insignificant.

There are, however, truly fundamental differences between these two societies, but they lie not in the material realm of biological propensities or proteins and calories. Rather, they are in the cultural constructions of these realities and in the social, psychological, and behavioral implications of those constructions.

The world views of these two societies, their cultural constructions of themselves and their realities, could hardly be more divergent. Semai see themselves as essentially powerless, helpless in a world of overwhelming malevolence over which they have little control. Keeping the infinite numbers of malevolent supernaturals at bay is a constant concern, and even the most mundane activities are hedged by rituals and surrounded by taboos in an effort to ward off the dangers that constantly threaten human survival.

Waorani look out on a very different world, one that holds few dangers beyond the human threats of witchcraft and raiding. There are few taboos, little magic,

and little concern with the supernatural in general. People see themselves as independent and autonomous, and the world around as a place to be exploited. They are confident and pragmatic, feeling fully capable of dealing with the world on their own terms.

While social structures and organization are quite similar, the tenor and content of social relations, premised as they are on these two differing views of the world, are dramatically different. For Semai, the only source of security in an overwhelmingly malevolent world lies in the nurturance and protection of kin and community. Anything that threatens the solidarity of this group of about 100 people is intensely threatening to individuals. The prospect of open conflict is extremely threatening, disrupting social relationships and calling into question the unity of the band. When conflict emerges, institutionalized mechanisms are immediately called into play to resolve the dispute and repair the social fabric, lest individuals be left alone and defenseless against the dangers that constantly menace without.

Similarly, lacking lineages, clans, clubs, or other associations, Waorani social structure, like that of the Semai, provides little framework for constructing social solidarity. Unlike the Semai, however, Waorani culture provides little basis for group integration or group consciousness and little concern with group cohesiveness beyond the extended family. With no communal rituals or responsibilities and little expectation of giving or receiving aid and assistance, every kindred and, ultimately every individual, is a self-sufficient and independent entity.

For the Semai, the possibility of violence is further limited by individual and cultural values that stress nonviolence and affiliation. These are an important part of the motivational context of all social interaction and an important component of self-image as well, exerting a powerful constraining influence on conflict and violence and helping to constitute a reality where violence is not perceived as an option in human relations.

For the Waorani, no such individual or social values exist. There are no comparable internalized controls on conflict and violence and no institutionalized mechanisms for resolving disputes and restraining conflict. Self-reliance is an ideal and individual autonomy a norm, and there are, thus, few constraints—psychological, social, or cultural—on the actions of individuals. In such a setting, the conflicts that are inevitable in any society were, until recently, given free rein, and any dispute was likely to escalate into a killing, which called for endless retaliation.

While the Waorani culture of war is undoubtedly the historical precipitate of a violent past, most of whose details are lost to us, the maintenance and continuation of Waorani warfare depended not on biological propensities or ecological relationships, but on an internal psychocultural dynamic. This is evidenced by the fact that, in the absence of substantive changes in the material realm, Waorani society transformed itself, almost overnight, from the most warlike known into one that is essentially peaceful. The catalyst was the return of several Waorani women and girls who had previously fled to other Indian groups to escape the killing, accompanied by two American missionary women. What they provided to their society was new cultural knowledge—new information and new perceptions of reality—and the Waorani responded by formulating new goals and choosing courses of action based on them. The result was that individual bands,

in a matter of months, abandoned a pattern of internal and external war that had persisted for generations.

When the perceptions of a new reality presented the opportunity to escape from the cycle of vendettas, the Waorani seized and implemented it, suggesting that human action, far from being the determined product of forces and factors external to human beings and human consciousness, is rather the result of people striving to realize their objectives within the context of realities that they themselves are constructing and reconstructing.

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NOTES

1. The "nonviolent" characterization of the Semai has recently been questioned by Knauff (1987), using his estimate of a Semai homicide rate. That estimate was based on reports of two killings cited by Dentan (1978) (one of which was the abandonment of a terminally ill person), and a population of 300, the size of Dentan's study community. The two cases that Dentan reported, however, represented the only known homicides in the total Semai population of some 15,000 people over nearly a generation (see also Robarchek and Dentan 1987; Dentan 1988; Robarchek 1989).

2. Now, however, with increasing acculturation, alcohol use is on the rise, especially in heavily acculturated lowland villages and among young men who have left their home settlements for wage labor, usually on plantations.

3. In 1987, while we were conducting our fieldwork, two Catholic missionaries—a bishop and a nun—were speared to death after an oil company helicopter ferried them into this group in an attempt to make contact. We also heard unconfirmed rumors of the spearings of several Indian oil exploration workers. (Also rumored are the killings of Waorani by oil workers shooting from helicopters.)

4. For a discussion of the impact of European penetration of Amazonia on indigenous warfare, see Ferguson (1990).

5. This was clearly illustrated by our Waorani informants who recounted stories of raids that they launched against neighboring Quichua for the purpose of acquiring machetes and axes.

6. With little resistance to introduced diseases, it is unlikely that many of these Waorani children survived for long. An elderly Ecuadorian woman, who spent her youth on haciendas near Tena owned by her grandfather, father, and husband, clearly remembered the capture of Waorani children "but," she recalled, "those Auca children always died from colds very soon."

7. This was so common that Yost (personal communication) recalls that he assumed

at first that the expression of rage by one or another of the fathers was simply a part of the marriage ritual.

8. For a critical discussion of the "scarce resource" argument, see Otterbein (1985).

9. Actually, there were three. One of us (C.J.R.) was also bitten, but we did not recognize it as a snakebite until much later, since the bite apparently occurred inside our house, she did not see the snake, and the fang marks were very small. Fortunately, envenomization was apparently light, but she was nevertheless delirious for several days and incapacitated for more than a week.

10. These differing perceptions of and attitudes toward kin and community are clearly expressed in other cultural beliefs and modes of social interaction, for example, in Semai and Waorani beliefs about ghosts and witches, and in differing patterns of economic exchange (see Robarchek 1988; Robarchek and Robarchek 1988).

11. Among Christian Waorani, *Wengongi* has now been largely assimilated to the Christian God, and he can now be called upon to intervene in human affairs. This is most commonly seen at the conclusion of the weekly church meetings, in prayers asking him to prevent individuals who are involved in conflicts from spearing one another.

12. We thank Katherine Peeke and Rosie Jung for sharing with us their recollections of the period of contact.

13. Our thanks to James Yost for making available to us the unpublished interview from which this quote is taken.

14. These two societies are also virtually identical in terms of other variables such as social structure, gender roles, and socialization, that have been central to recent discussions of violence and warfare (e.g., Munroe et al. 1981; Segall 1983; Ross 1985, 1986a, b). They are also strikingly similar to the Gebusi described by Knauff (1985, 1987), who argues that the lack of culturally recognized distinctions in rank among adult men predisposes societies to a particular pattern of violence, but with "variations... influenced by interactions between ecological and culture-historical factors as well as by sociopolitical and psychological dynamics." The issue raised by these authors is beyond the scope of this paper, but they will be addressed elsewhere.

REFERENCES

- Anonymous. 1980. Jungle identity crisis: Auca country revisited. *Christianity Today* 4 January: 48-50.
- Barkow, J. H. 1984. The distance between genes and culture. *Journal of Anthropological Research* 40(3):367-379.
- Bennett Ross, J. 1980. Ecology and the problem of the tribe: A critique of the Hobbesian model of preindustrial warfare, pp. 33-60. In *Beyond the Myths of Culture*, E. B. Ross, ed. New York: Academic Press.
- Chagnon, N. 1988. Life histories, blood revenge, and warfare in a tribal society. *Science* 239:985-992.
- Davis, W. E. and J. A. Yost. 1983. The ethnobotany of the Waorani of Eastern Ecuador. *Botanical Museum Leaflets, Harvard University* 29(3):159-217.
- Dentan, R. K. 1968. *The Semai: A Nonviolent People of Malaysia*. New York: Holt, Rinehart and Winston.
- . 1978. Notes on childhood in a nonviolent context: The Semai case, pp. 94-143. In *Learning Non-aggression. The Experience of Non-literate Societies*, A. Montague, ed. Oxford: Oxford University Press.
- . 1988. On reconsidering violence in simple societies. *Current Anthropology* 29(4):625-629.

- Ferguson, R. B. 1990. Blood of the Leviathan: Western contact and warfare in Amazonia. *American Ethnologist* 17(2):237-257.
- Gross, D. R. 1975. Protein capture and cultural development in the Amazon Basin. *American Anthropologist* 77(3):526-549.
- Harner, M. J. 1972. *The Jivaro: People of the Sacred Waterfalls*. Garden City, NY: Doubleday.
- Harris, M. 1968. *The Rise of Anthropological Theory*. New York: Thomas Y. Crowell Company.
- . 1974. *Cows, Pigs, Wars and Witches: The Riddles of Culture*. New York: Random House.
- . 1979. The Yanomamo and the causes of war in band and village societies, pp. 121-133. In *Brazil: Anthropological Perspectives*, M. L. Margolis and W. E. Carter, eds. New York: Colombia University Press.
- Johnson, A. 1982. Reductionism in cultural ecology: The Amazon case. *Current Anthropology* 23(4):413-428.
- Knauff, B. M. 1985. *Good Company and Violence: Sorcery and Social Action in a Lowland New Guinea Society*. Berkeley: University of California Press.
- . 1987. Reconsidering violence in simple human societies. *Current Anthropology* 28(4):457-500.
- Larrick, J. W., J. A. Yost, and J. Kaplan. 1978. Snakebite among the Waorani Indians of Eastern Ecuador. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 72(5):542-543.
- Munroe, R. L., R. H. Munroe, and J. W. M. Whiting. 1981. Male sex-role resolutions, pp. 611-632. In *Handbook of Cross-Cultural Human Development*, R. H. Munroe, R. L. Munroe, and B. B. Whiting, eds. New York: Garland STPM Press.
- Murphy, R. 1957. Intergroup hostility and social cohesion. *American Anthropologist* 9:1018-1035.
- Orlove, B. S. 1980. Ecological anthropology. *Annual Review of Anthropology* 9:325-373.
- Otterbein, K. F. 1980. Internal war: A cross-cultural study, pp. 204-223. In *The War System: An Interdisciplinary Approach*, R. A. Falk and S.S. Kim, eds. Boulder: Westview Press.
- . 1985. *The Evolution of War: a Cross-Cultural Study* (2nd edn.). New Haven: HRAF.
- Peeke, C. 1973. *Preliminary Grammar of Auca*. Norman, Oklahoma: Summer Institute of Linguistics.
- Robarchek, C. A. 1977a. Semai nonviolence: A systems approach to understanding. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Riverside.
- . 1977b. Frustration, aggression, and the nonviolent Semai. *American Ethnologist* 4(4):762-779.
- . 1979a. Learning to fear: A case study in emotional conditioning. *American Ethnologist* 6(3):555-567.
- . 1979b. Conflict, emotion and abreaction: Resolution of conflict among the Semai Senoi. *Ethos* 7(2):104-123.
- . 1986. Helplessness, fearfulness and peacefulness: The emotional and motivational context of Semai social relations. *Anthropological Quarterly* 59(4): 177-183.
- . 1988. Ghosts, witches and the psychodynamics of Semai peacefulness. Paper presented at the 87th Annual Meetings of the American Anthropological Association, 16-20 November 1988, Phoenix, Arizona.
- . 1989. Primitive warfare and the ratomorphic image of mankind. *American Anthropologist* 91(4):903-920.

- Robarchek, C. A. 1990. Motivations and material causes: On the explanation of conflict and war, pp. 56-76. In *The Anthropology of War*, J. Hass, ed. Cambridge: Cambridge University Press.
- Robarchek, C. A. and R. K. Dentan. 1987. Blood drunkenness and the bloodthirsty Semai: Unmaking another anthropological myth. *American Anthropologist* 89(2):356-365.
- Robarchek, C. J. 1981. Cash economy and the evolution of ambilineal ramages among the Semai Senoi. Paper delivered before the Southwestern Anthropological Association Annual Meetings, 2-6 December 1981, Los Angeles, California.
- Robarchek, C. J. and C. A. Robarchek. 1988. Reciprocities and realities: World views, peacefulness and violence among Semai and Waorani. Paper delivered before the 87th Annual Meetings of the American Anthropological Association, 16-20 November 1988, Phoenix, Arizona.
- Ross, E. B. 1978. Food taboos, diet and hunting strategy: The adaptation to animals in Amazonian cultural ecology. *Current Anthropology* 19(1): 1-36.
- . 1979. Reply to Lizot. C.A. comment. *Current Anthropology* 20(1):51-55.
- Ross, M. H. 1985. Internal and external conflict and violence: Cross-cultural evidence and a new analysis. *Journal of Conflict Resolution* 29:547-579.
- . 1986a. The limits to social structure: Social structural and psychocultural explanations for political conflict and violence. *Anthropological Quarterly* 59(4):171-176.
- . 1986b. A cross-cultural theory of political conflict and violence. *Political Psychology* 7:427-469.
- Segall, M. H. 1983. Aggression in global perspective, pp. 1-43. In *Aggression in Global Perspective*, A. P. Goldstein and M. H. Segall, eds. New York: Pergamon Press.
- Spiro, M. E. 1967. *Burmese Supernaturalism*. Englewood Cliffs, NJ: Prentice-Hall.
- Wallis, E. G. 1973. *Aucas Downriver*. New York: Harper and Row.
- Yost, J. A. 1981. Twenty years of contact: The mechanisms of change in Wao (Auca) culture, pp. 677-704. In *Cultural Transformations and Ethnicity in Modern Ecuador*, N. A. Whitten, ed. Urbana: University of Illinois Press.
- Yost, J. A. and P. M. Kelley. 1983. Shotguns, blowguns, and spears: The analysis of technological efficiency, pp. 189-224. In *Adaptive Responses of Native Amazonians*, R. B. Hames and W. Vickers, eds. New York: Academic Press.