The Yanomami of the headwaters of the Orinoco, Rio Branco (Auaris, Uraricuera, Mucajaí, Catrimani), and some northern tributaries of the Rio Negro (Cauaburí, Marauia, Padauiri) have a population of some 22,000 (Early and Peters 2000), of which some 15,000 live in Venezuela1 (OCEI 1994: 24).

The Yanomami conglomerate consists of at least three subgroups with mutually unintelligible languages one of which, the Sanimá, are also quite different in many cultural ways. Postmatrimonial uxorilocality e.g. gives women a greater say among the Sanimá and may lead to a less conflict-ridden behavior, as may the presence of the bitter manioc complex and the adoption of building sturdy dugout canoes learned from the Carib-speaking Ye’kwana. The Yanomami/Yanam on the other hand seems to constitute a language continuum that is intelligible only with great difficulties between both extremes.

The best known subgroup is what Jacques Lizot (1984) calls the Central Yanomami just north of the Upper Orinoco and their neighbors immediately to the south, studied by Napoleon Chagnon since 1964. Chagnon distinguishes between «lowland» and «highland» Yanomami. Settlements of the latter in the Sierra Parima, the reputed homeland of the Yanomami, are smaller and there is less fighting. According to Smole, among the Barafiri (Sierra Parima Yanomami) there has been «no [record of] warfare for a generation» (1976: 76). Even more to the point are the Sanimá of the Caura/Erebato basin in Venezuela and adjacent areas in Brazil to the south. Alcida Ramos spent 23 months among the Sanimá for her dissertation research and numerous months thereafter but «[d]uring all the months I spent with them, there was not a single case of raiding in the Upper Auaris region [in Brazil]» (Ramos 1995: 44) even though the Sanimá have the same concept of waiteli as the Yanomami (waitheri). The most salient episode of warfare among the Sanimá was their war against the Ye’kwana of the Caura/Erebato which was won by the latter on the basis of their superior technology.

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1 This number includes 2,058 Sanimá, mainly of Bolivar State.
The lowland Yanomami are the ones considered the fiercest (Chagnon 1992: 85-86, 204, see also Chagnon 1968). In the Yanomami villages studied by Chagnon «approximately 25% of all deaths among adult males were due to violence (Chagnon 1992:205). But as Lizot points out, even in this particular area one has to see ‘fierce’ behavior in perspective (1984: 177 ff.).

Chagnon consequently is to be congratulated for having reversed his position, inherited from New Tribes missionary James Barker (1953, 1959) and held for some twenty years, that the Yanomami ethnic group as a whole is «fierce» (Chagnon 1992: xii). This opens the door for a long necessary distinction between a legitimate study in human ethology and ethnological research. It is indeed the case, as expressed by the late Tim Asch (1990), that in many Yanomami villages there might be a few aggressive individuals, but that does not mean that all Yanomami, much less the whole conglomerate, are fierce.

The Warao are very heterogeneous from one end of the tribal lands in north-western Guyana stretching through the Orinoco Delta up into the Venezuelan states of Monagas and Sucre. While the different Warao dialects are mutually intelligible without too much difficulty, the subgroups come from diverse cultural traditions mixed haphazardly in colonial times while fleeing from persecution by European explorers and colonists (see also Keymis 1968 [1596]: 8). In the extreme south-east you have some remnants of Warao foragers called «forest people,» daunarao or «morichaleros» ohidu arao by their horticultural brethren who consider themselves navigators (see Heinen and García-Castro 2000).

The Orinoco Delta itself similarly was mainly peopled by «morichaleros,» living on the starch of the moriche palm (*Mauritia flexuosa*) with the few groups making a living from horticulture called hobasa arao «flatwater people» (on river banks) or nabaidarao «seacoast people». Most of these are descendants of the seafaring Siawani, a Warao-speaking group known for their skill in the construction of excellent dugout canoes «which they traded for gold to Guayana and for tobacco to Trinidad» (Ralegh [1596] 1968). The morichaleros of the Central Orinoco Delta call themselves Waraowitu, «proper lowland people», a term already reported by the British explorer Sir Walter Ralegh in 1595 (ibid.).

Finally, the people on the coast of the Gulf of Paria south of the peninsula of the same name and east of the Serranía de la Paloma, are Warao on foot with only very rudimentary dugouts who lived by trading fish for horticultural products with their Carib-speaking neighbors and who call themselves until today Waraotu (the Farautes in colonial Spanish).

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2 Barker, in the sixties, was known on the upper Orinoco to hold a strong view on this matter, and he expressed it in his articles in the 50s in the Boletín Indigenista Venezolano.
3 By 1992 the word «fierce» had disappeared not only from the title but also from the index even though the chapter on chest pounding had hardly changed.
4 Their criollo neighbors call them contemptuously «come-loros.»
Remnants of Carib- and Arawak-speakers were assimilated into the Warao population at several times and are mainly found in the south-eastern Delta and south of the Orinoco Main River, the Río Grande del Orinoco.

The Warao are the second largest indigenous group in Venezuela after the Wayúu (Guajiro) and numbered some 24,000 during the 1992 indigenous census (OCEI 1994: 24). They may come to a total of about 29,000 by now.

Some Similarities Among the Yanomami and Warao Regarding Warfare and Violence

Both among the Yanomami and the Warao warfare and violence is mitigated by a number of observances and rituals. The most important among these is getting back at enemies by practicing witchcraft. Among the Yanomami very often witchcraft replaces actual warfare and the Warao are not known to practice actual warfare at all. Hoa isia kubaya, «we fight with hoa spells» is how the indigenous governor Kwabebe of the Murako settlement in the Central Orinoco Delta put it referring both to intra- and intertribal warfare (fieldnotes and tape recordings 12-5-1986).

The Yanomami take the hallucinatory drug ebena (general) or hisiomi (Adenanthera peregrina) (specific), called «yopo» in Venezuela, in order to do their incantations. Warao hoarotu-shamans practice witchcraft by smoking long wina cigars (J. Wilbert 1987). If somebody dies relatives spread clay on the mortuary dugout, dauwa, i.e. the Warao coffin, in order to uncover the origin of the spell, the tracks of the hebu-spirit that caused the death and the shaman that sent the evil spirit.

Cleansing Rituals

Both the Yanomami and the Warao have cleansing rituals when they have «killed» someone. Among the Yanomami the cleansing ritual is called «the unokaimou [ceremony]» (Chagnon 1992: 200). This ceremony may last between 15 days and a month and the individuals in question have to bath repeatedly and are rubbed with nishinama (a kind of fern) leaves (Cocco 1988: 391 ff.).

The concept of unokai is interesting but has its limitations. It implies that a male has participated in the killing of an enemy, but not only the actual killer is unokai but unokai are all those that have participated in the killing such as shooting an arrow into the dead body. Furthermore, the concept does not distinguish between actual warfare and the «killing» by witchcraft. What is more, some men become unokai through the killing of the «alter ego,» noreshi or noneshi of a person, such as an harpy eagle (Harpia harpija) mohomi or a deer (Mazama sp.) haya (Cocco 1988: 259, 456; Chagnon 1992: 113). Finally, the cleansing ritual applied to young women at menarche is extremely similar
to unokaimou, a fact traced back by Cocco to the shedding of blood (1988: 391 n11), but also noted by Chagnon (1992: 200).

As pointed out earlier, the Warao are not known to carry on actual warfare, but fight with witchcraft by invoking hebu-spirits. Nevertheless, a hoarotu-shaman who has killed by applying sorcery must undergo a cleansing ritual. This consists of bathing and of doing rounds under a hobo-tree, usidu (*Spondias mombin*). I am not sure if this also implies being rubbed with the corresponding leaves, even though rubbing hands with scented leaves or resins (e.g. from the currucay tree siburu) is used to get rid of odors such as from fish. The leaves of the hobo tree are, however, fragrant and are used by Warao women to produce a medicinal infusion (W. Wilbert 1986: 398-406; see also 1996: 230-235).

What was said of the Yanomami unokaimou ceremony at the menarche of young girls is also true of the Warao cleansing rituals during the rites de passage from anibaka, small girl, to iboma, puber young woman.

**The Roots of Violence**

Stealing women is said to be one of the main reasons for violence and strife among the Central Yanomami. This is actually what the Yanomami themselves contend. And it is a theme that Amerindians of the Guianas emphasize through most of their known history. Already in the reports by the English explorer Sir Walter Ralegh about his foray up the Orinoco and until the mouth of the Caroní river in 1595 indigenous captains express the desire of a numerous progeny and the information of his Spanish counterparts such as Domingo de Vera e Ibargoyen likewise stress this aspect. States Ralegh:

> «And in truth they warre more for women, then eyther for gold or dominion. For the Lords of countries desire many children of their owne bodies, to encrease their races and kindreds, for in those consist their greatest trust and strength ([1596]1968: 78).

Nevertheless, the reality is more complicated. As Chagnon states in reference to the hypotheses of Marvin Harris and his school: «... their warfare (and warfare in any group) was too complex to reduce to a single variable such as protein scarcity» (Chagnon 1992: 93, see also Chagnon 1974).

One account I can partially agree with is the cultural materialist position expressed by Ferguson (1995; see also Heinen and Illius 1996). In a nutshell it argues that tribal warfare is exacerbated in areas of Western expansion (see also Ferguson and Whitehead 1992a). If there is any explanation for the

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<sup>5</sup> From an economic point of view it can be said that in Amerindian areas the marginal productivity of labor is high. Rivière (1984) analyzes the fact from the point of view of social organization.
increased warfare in the Yanomami lowlands in Venezuela this proposition is
at least partially to the point. Cases of indigenous groups that practice
warfare but had not been contacted previously is no proof to the contrary.

Do Violent Individuals Have More Kids?

Yes, they do, insists Chagnon and writes a famous if controversial
research paper in the influential journal Science under the title Life Histories,

There was a fairly broad critique of the underlying assumptions of the
article, especially from Brazil and Venezuela, but also from colleagues in the
U.S. Perhaps the most cogent one was the fact that violent people find a
premature death, and that the descendants of these were not included in the
sample. To me it seems a toss-up and I will not join into the chorus.

My own reservations go in a different direction, namely that too much
weight is given to inclusive fitness theory in the total of behavioral ecology.
Consequently Krebs and Davies ask themselves the question «How plausible
are our main premises [regarding ‘selfish genes’ and ‘inclusive fitness’]?»
selection and successful altruism’ (Science 1990: 1665-8, see also 1983) we
can observe that reciprocal altruism may go beyond inclusive fitness. In fact,
the concepts of human docility and bounded rationality have weathered well
the passage of time.

As an economist by training I tend to subscribe to methodological
individualism, even if there may be occurrences of natural selection of
communities. The controversy is still going on at this time6. Thus I am
inclined to use similar models as evolutionary ecologists do. Don’t we go back
all of us to F.Y. Edgeworth and his Mathematical Psychics of 1881 as well as
to logician W.S. Jevons’ 1871 Theory of Political Economy? Were not Carl
Menger’s marginalist models taken over and adapted to behavioral ecology in
the 1980s?7

What the above discussion shows convincingly is the great plasticity of
the human animal and its societies (see also West-Eberhard 1989). If we
accept that «[l]earning can be a general form of phenotypic plasticity...», as
argued by Agrawal (2001: 324), little is really predetermined and just as there
is a vicious circle of killing and mayhem there might be a virtuous circle of
peaceful coexistence. That this is so has been convincingly shown by R.
Axelrod and W.D. Hamilton in their 1980’s article on the «Evolution of
Cooperation» in Science (see also Axelrod 1984). How else would one explain
cooperation between unrelated individuals if not by reciprocal altruism.

debate is the revival of systems theory.
7 See Rapport & Turner 1977 (Economic Models in Ecology) and references therein.
We should be aware, however, that in economics a decisive refinement took place, namely the New Institutional Economics (NIE). This movement was started by Ronald Coase (1937) and continued by historical economist Douglass North, especially in his work of 1990 «Institutions, Institutional Change, and Economic Performance.» The gist of this position was that institutions matter and that transaction costs are important. Later on the bounded rationality character of human decision making was added. In evolutionary ecology, however, «perfect knowledge» is sometimes deemed an optimal strategy, even though it is known not to be an ESS (evolutionary stable strategy).

Summing up we can say that even among the fiercest of Yanomami there are many mechanisms that reduce the number of victims of violence.

The Warao Fight With Hebu-Spirits

The Warao do not practice warfare. They do have the isahi shield contest, by their own account a fight about women (see Heinen 1988: 66-7), pitting two individuals or whole communities against each other, both intra-group and inter-tribally.

In former times this would be a violent conflict, but today it is merely a sport. In early colonial times, however, warfare was rampant among different Warao groups such as between the Siawani (Chaguanes) and the Waraowitu. This was well known to the Spanish and also to the British explorer Sir Walter Ralegh ([1596] 1968: 41-42). Equally, there was a lot of fighting with other ethnic groups, especially the Caribs (Kari'ña) (Ralegh [1596] 1968: 43). Today there are numerous violent deaths among the Warao, but it is generally impossible to decide in any concrete case if a fatal accident originated by a mishap or was a homicide. Ever present accusations in such cases is proof that some are premeditated murder. Often during the weekly drunken brawls people fall into the water and drown. On long trips sometimes people go missing: «you know, he fell into the river during the night and we could not find him again» is what one hears with relative frequency.

What makes adding up such cases quite difficult is the fact that the Warao take eye-witness accounts and dreams as equal proof. This is not to say that they don't know the difference, they do but regard them to be on the same level of veracity. In some cases of suspected homicide, the Venezuelan police came from up-river, but was unable to decide one way or another. Some people are killed by falling trees, which might be accidents or not.

If one counts about 50% of «accidental» deaths as homicides, these nevertheless amount to nearly 10% of fatalities. We see consequently that even without declared warfare, a sizeable amount of people die a violent death among the Warao.
Some Important Differences Between the Yanomami and the Warao

Perhaps the most salient differences between the two groups have to do with the role of women (see also Kalka 1995). While the role of women is not unimportant among the Yanomami, they definitely have a male supremacy complex which the Warao do not have. The Warao do have a fine sense of equilibrium between the sexes. We have already seen that uxorilocality among the Sanimá predisposes them to a less belligerent behavior than the Central Yanomami. Among the Warao of the Central Orinoco Delta, uxorilocality is a lifelong requirement that has few exceptions (Heinen 1972). The group of sisters, both real and classificatory, are dominant in the villages of the Central Orinoco Delta and the inmarrying sons-in-law, dawatuma (reciprocally harayaba), are traditionally subordinate to their father-in-law, arahi. This goes as far as symbolically handing over unrelated sons-in-law as sacrificial victims (aromu «pets») to demanding hebu-spirits. The corollary is that there are no fraternal interest groups among the Warao, at least not in the sense of forming corporate groups as is the case of Yanomami factions (Early and Peters 2000: 226-229).

The Reach of Genealogical Demographic Data

In the 1960s and 70s this author participated in biomedical, epidemiological and serological research in the Orinoco Delta. Genealogical data was collected of 1,357 individuals from five Warao subtribes (Salas and Heinen 1977, see also Wilbert and Layrisse 1980).

The Warao are easygoing and cooperative and have no qualms to speak about their ancestors if it is done in a quiet and pondered way. Doing this type of research among them was a pleasure. They have no notion of their age, but we were able to calculate their date of birth with give or take four months by their kinship system which distinguishes between elder or younger through the whole subtribe. On the basis of this ranking plus a few dates of real events such as presidential elections or the establishing of a sawmill in the area it was possible to ascertain the age of most individuals.

Nevertheless, talking to professional demographers has convinced me that our data on births and especially deaths are not nearly exact enough to lend themselves to formal demographic analysis. The data demographers actually need are such as can be found mainly in the records of Western type dispensaries or religious missions.

Conclusion: The Unfinished Business

Summing up we can say that cases of violent death are not nearly as unequal among the Yanomami as a whole and the Warao Amerindians as a
whole as the concepts of «fierce» and «peaceful» seem to imply. What remains to be done in order to reclaim comparative demographic data is more research in the archives of religious missions.

What is more, there are several theoretical areas besides the collection of cogent demographic data that have to be analyzed in more depth than has been done up to now. One of them is the relation between Human Ethology and Ethnology. Ethology generally focuses on whole species while ethnology is interested in individuals or groups of individuals. How much one can extrapolate from one to the other has so far not been clarified. Sociobiologists such as Harvard’s Edward O. Wilson are interested in whole species, in this case ants in general. They are not interested in an ant called Max that makes its home in the Adirondacks. Can we really say something about our stone-age ancestors from the behavior of present day Yanomami or Warao?

This is not to favor one approach over the other. It merely urges to invest more research effort in the topic. Another issue is, however, how we can help tribal societies to survive. To defend «science» against sensational journalism will not do. Moral aspects and science are two sides of the same coin. While applied anthropology and e.g. demography have to be strictly separated methodologically they interact in the day to day activity of fieldwork. The former consists of clinical descriptions while the latter goes by the canons of rigorous falsification and replication. But as Briggs and Mantini (2001) point out in their contribution to the Current Anthropology forum on the Yanomami, Brazilian «garimpeiros» and the interference in tribal life by regional bureaucracies are major issues.

If we do not act out of ethical standards, we should at least step in out of opportunism if we value cultural diversity. Can we value biological diversity but not cultural and linguistic diversity? 8

Furthermore, beyond physical survival there are issues of social and economic change. Self contained small scale societies have a number of interesting institutions, but ethnic minorities need different set-ups as e.g. reciprocity as a risk avoiding mechanism will not work well in the framework of national societies. Anthropologists who argued heatedly about formal vs. substantive economics should not leave processes such as the formation of unwritten institutions to economists.

Perhaps we should conclude that while inclusive fitness is an interesting topic, we should broaden our scope and focus on human conflict and cooperation in its widest sense.

8 Two interesting books that could serve as a general start and are very readable are Sigmund (1993) and Ridley (1998).
Abstract

The societies under consideration here are the Yanomami of the Orinoco headwaters and the Warao of the Orinoco Delta. Both are basically foragers, the Yanomami hunters and the Warao fishermen, but both also practice horticulture in an unsystematic fashion since prehistoric times.

The former have a reputation of being fierce and the latter of being peaceful, but at the end of the day, when the dead are counted, the difference is not all too great. This is because the Yanomami are not all that «fierce» and the Warao are not all that «peaceful.»

The present paper compares the intra-tribal violence and aims at analyzing some of the differences and similarities observed in their warfare behavior.

Resumen

Las sociedades bajo consideración en este estudio son los Yanomami de las cabeceras del Alto Orinoco y los Warao del Delta del Orinoco. Ambos son básicamente recolectores, los Yanomami recolectores y los Warao pescadores, pero ambos practican también la horticultura de modo no sistemático y desde tiempos prehistóricos.

Aquéllos tienen fama de ser fieros y éstos de ser pacíficos, pero -al final del día- cuando se cuentan los muertos, la diferencia no es demasiado grande porque los Yanomami no son tan “fieros” y los Warao no son tan “pacificos”.

Este estudio compara la violencia intra-tribal, y analiza algunas diferencias y similitudes en su comportamiento guerrero.