



## In Memoriam

### Napoleon A. Chagnon (1938–2019)

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Published online: 07 January 2020

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That the males of all mammals eagerly pursue the females is notorious to every one (Darwin 1871:272).

“Thought I was shitting you about the fierce people, huh?” (Chagnon to Timothy Asch at the beginning of their film, *The Ax Fight* [1975]).

Napoleon Chagnon’s long-term research among the Yanomamö<sup>1</sup> of Venezuelan Amazonia began somewhat serendipitously. Chagnon, a PhD student at Michigan, intended to conduct his research among the Suyá of the central Brazilian highlands, a plan that was upended by a military coup in Brazil. Around the same time, James Neel, one of the founders of the study of human genetics, was engaged in an effort to collect blood samples from most indigenous groups in Venezuela, including one of the least acculturated groups, the Yanomamö. Chagnon and Neel, who was also at Michigan, decided to collaborate on Yanomamö research because they shared an interest in quantitative population demography, Chagnon from the perspective of traditional anthropological studies of kinship and Neel from the perspective of genetics and human evolution.

Thus began about 5 years of intense fieldwork during which Chagnon, whom the Yanomamö called Shaki, developed the themes that would guide and characterize his research for the next half century. These included the interrelationships among kinship, demography, politics, marriage, settlement and warfare in a small-scale, politically autonomous society, all of which are discussed in his dissertation (Chagnon 1964). His monograph, *Yanomamö*, became an all-time best-selling ethnography. Several of

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<sup>1</sup>The Yanomamö are referred to by several other names, including Yanoama, Yanomama, Yanomami, Yanomam, Waika, and Guaharibo.

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Chagnon's films on the Yanomamö, made in collaboration with Timothy Asch (1970, 1974, 1975; Asch and Chagnon 1973), have become classics in visual anthropology. His biomedical work with Neel helped establish the field of human genetics and, more importantly, ultimately saved hundreds of Yanomamö lives. And his edited volume with Bill Irons (Chagnon and Irons 1979) helped launch human behavioral ecology—the application of evolutionary theory to understanding human behavior. Throughout, he was an anthropological trailblazer in the adoption of technology to advance our knowledge, including the early use of computers (Fig. 1) and computational approaches in kinship and genealogical analysis (Chagnon and Bryant 1984; MacCluer et al. 1971); GPS, GIS, and satellite imagery to explore and map of Yanomamö villages, gardens, and political history (Chagnon 1991; Craig and Chagnon 2006); and interactive technology for students to explore ethnographic data (Biella et al. 1997). In recognition of these contributions to anthropology, Chagnon was elected to the National Academy of Sciences in 2012.

## Biomedical Research

Most of Chagnon's biomedical research among the Yanomamö was conducted in collaboration with Neel. To better understand human evolution, Neel wanted to understand the breeding structure, major determinants of survival and reproduction, and patterns of genetic variation in what he regarded as some of the last remaining populations living in a manner resembling that of our hunter-gatherer ancestors (Neel et al. 1964; Neel and Chagnon 1968). It is somewhat ironic that although Neel played a key role in Chagnon's decision to work with the Yanomamö, Chagnon himself initially did not adopt a Darwinian theoretical framework. It was Neel and colleagues, for example, who first highlighted the selective importance of their discovery that among



**Fig. 1** Napoleon Chagnon, upper Mavaca River, Venezuela, 1986 (Photo by Raymond Hames)

the Xavante and Yanomamö, headmen have extraordinary reproductive success (Neel 1980; Neel and Salzano 1967).

Neel and Chagnon's biomedical research, which depended critically on Chagnon's work on Yanomamö genealogies and demography and his mastery of the Yanomamö language, had two major components. The primary focus was on Yanomamö genetic variation, with several studies documenting genetic differentiation among Yanomamö groups (Arends et al. 1967; Chagnon 1972; Gershowitz et al. 1970, 1972; MacCluer et al. 1971; Spielman et al. 1972; Williams et al. 2002). A key insight was that cultural and social factors have major impacts on patterns of genetic variation. To give one example, a Yanomamö village was found to have high frequencies of three blood group alleles that were rare or absent in most other Yanomamö villages. Two of the alleles were common in Ye'kwana villages, the nearest of which was about 200 km away, and one allele was previously known only in a woman from the Maku, a group that was otherwise essentially extinct. Chagnon et al. (1970) documented how women abducted from the Ye'kwana and Maku introduced these alleles into this Yanomamö village (see also Weitkamp and Chagnon 1968). Moreover, whereas Yanomamö women often practiced infanticide, the abducted women belonged to ethnic groups without this practice. Hence, the abducted women had more offspring than Yanomamö women, and notably more daughters, who, unlike males, had less variance in their reproductive success. Identifying the impact of such social and cultural practices on genetic variation has now become a cottage industry (e.g., Heyer et al. 2012; Oota et al. 2001).

The second important component was the health of such indigenous populations, especially the consequences of contact with outsiders. This work motivated a key humanitarian effort in 1968. Neel and colleagues' serologic studies of blood specimens revealed that the Yanomamö were a "virgin-soil" population for measles—in other words, they had little or no exposure to this virus. In such populations, mortality from measles, which is incredibly infectious, can exceed 20%. Neel therefore obtained 2000 doses of measles vaccine to administer during their 1968 expedition. Unfortunately, measles arrived among the Yanomamö shortly before Neel, Chagnon, and their colleagues did. In a heroic effort, Neel and his team vaccinated Yanomamö in numerous villages in an effort to prevent the spread of the virus (Neel et al. 1970), likely saving hundreds of lives.

## Warfare

Chagnon was preoccupied with the causes and consequences of warfare in small-scale societies throughout his career (e.g., Chagnon 1968a, b, 1988, 1996, 2013). Despite his reputation for biological theorizing, Chagnon's empirical research on warfare focused on the proximate social and cultural factors that lead to war, and the political and demographic consequences that followed. His research, much of it appearing in his PhD dissertation, gives us the single most important data set and analysis of warfare in a large, politically independent, culturally intact and nonhierarchically organized population in which warfare had not yet been suppressed by external forces. This work is incredibly rich and nuanced, and collectively it forms a textbook for the study of tribal warfare, social organization, kinship, marriage, feasting, and alliances as an integrated whole.

Chagnon's early work on warfare among the Yanomamö (Chagnon 1968a, b) identified a constellation of interacting cultural practices, social realities, and biological drives that were the proximate determinants of Yanomamö warfare, and that helped explain why the Yanomamö he studied in the Mavaca Basin, but not some other similar groups, nor even Yanomamö in other regions, were locked in tragic cycles of lethal raids and counter-raids. In brief, the Yanomamö were polygynous, practiced infanticide, and had pregnancy and postpartum sex taboos. These cultural practices sharply limited opportunities for men to satisfy their sexual desires in socially acceptable ways, motivating them to pursue affairs with other men's wives or to capture women from other villages. This sparked violent reprisals, leading to village fissioning and intervillage hostilities. To protect themselves, villages formed military alliances with other villages by exchanging women in marriage. In many cases, these exchanges were unbalanced, further reducing some men's sexual opportunities. As Chagnon put it:

It would be difficult to exaggerate the consequences for Yanomamö social organization of this single phenomenon: the feuds that lead to the splitting of villages and the cause of fighting between villages are largely the result of the shortage of women (1964a:7–8).

Although Chagnon's analysis of Yanomamö warfare was, in many ways, not so different from analyses of warfare and marriage alliances in other societies, his emphasis on male sexuality as a primary source of conflict, and his later attempts to understand warfare as an evolved aspect of human nature, did not sit well with some anthropologists. The major theoretical and empirical challenges came from Marvin Harris and his student, R. Brian Ferguson.<sup>2</sup> Harris, and later Ferguson, instead sought the roots of Yanomamö warfare in conflicts over material resources. Harris argued that warfare functioned at the group level as a mechanism to regulate population size, thus ensuring adequate access to animal protein, which is limited in Amazonian tropical forests (Harris 1984; cf. Chagnon and Hames 1979). Ferguson, on the other hand, argued that "wars occur when those who decide to start a war believe it is in their practical, material self-interest to do so" (Ferguson n.d.; see also Ferguson 1984). For Ferguson, Yanomamö warfare was best explained by conflict over access to Western trade goods, including those provided by Chagnon himself (Ferguson 1995).

Given the intensity of the debates between Chagnon and Harris and Ferguson, it is ironic that their theoretical perspectives were not so dissimilar. Chagnon and Harris both adopted an evolutionary framework (Chagnon at the individual level, Harris at the group and cultural level), emphasized cultural factors, and, as critical anthropology swept the discipline, were unflinching advocates for scientific anthropology (Chagnon 2013). Chagnon and Ferguson, on the other hand, both emphasized the pursuit of self-interest in explaining warfare. Chagnon spoke well of Ferguson's analysis of warfare among Northwest Coast groups, which highlighted the role of material self-interest (Ferguson 1984, n.d.), but added that self-interest includes reproductive self-interest (Chagnon 1990).

Among Chagnon's best-known findings are that Yanomamö men who achieve the culturally valued and publicly recognized status of *unokai* (killers) have higher

<sup>2</sup> Harris was on Ferguson's dissertation defense committee.

reproductive success than other men (Chagnon 1988). Further analyses found that the greater reproductive success of unokai is explained by their coalitions with other unokai in joint lethal raids, and hence greater access to marriage partnerships (Macfarlan et al. 2014). The deeper theoretical importance of these findings—that it is not killing per se but the achievement of a positively valued social status that translates into better mating and other opportunities (Irons 1979)—is still inspiring work on the relationship between cultural success and reproductive success (Von Rueden and Jaeggi 2016).

## Marriage, Kinship, and Demography

Chagnon, in one way or another, based almost all his work on kinship because of its central role in the organization of society. Kinship systems, including classification, descent, and marriage, have been core and hotly debated issues in anthropological thought at least since Lewis Henry Morgan's *Systems of Consanguinity and Affinity in the Human Family* (1871). Major contributors that inspired Chagnon's work included Lévi-Strauss, Durkheim, Mauss, Sahlins, and Fortes (e.g., Chagnon 1982; Chagnon and Bugos 1979). Underlying these debates are tensions between the formal kinship structures (e.g., classificatory kin terms, marriage rules, descent systems), their purpose and effects, behavior that doesn't conform to these ideal systems, and the extent to which kinship systems can be explained by biological relatedness. Chagnon summarized his own approach to kinship thusly (1983:110):

One of these approaches [to kinship] is the 'structuralist approach', which focuses on "ideal models" of societies, models that are constructed from the general rules of kinship descent, and marriage. These are highly simplified but very elegant models, but they do not address the actual behavior of individuals in their day-to-day kinship roles, their actual marriage practices, their life histories, and why individuals simply cannot "follow" the ideal rules. The second approach is the "statistical models" approach, which is usually based on large numbers of actual behavioral and genealogical facts, but yields less elegant, less simplified models. However, such models conform more to reality. I prefer the latter, for they lead to a more satisfactory way to understand individual variation and therefore the ability to predict social behavior. To be able to engage in this approach, one must, of course, know what the "ideal" patterns are that people's behavioral choices deviate from.

Chagnon's ambition in the 1960s was to make a major contribution to kinship theory by quantifying the degree of closeness in Yanomamö kinship relationships and patterns of descent. To do so, Chagnon meticulously collected demographic and genealogical data (Chagnon 1974), which he then used to calculate degrees of genealogical closeness and distance based on Sewall Wright's F statistic, something that, despite a century of controversy, had apparently never before been contemplated, and which Chagnon (2013) thought critical for advancing the field.

Yanomamö have an Iroquois/Draavidian kinship system with prescriptive bilateral cross-cousin marriage, polygyny, and exogenous patrilineages. Marriages are both reproductive and political alliances, often arranged by older relatives. Men typically

marry each other's sisters, forming agnatic bonds and enabling them to support their sisters. This sets up incentives, where possible, for men to arrange marriages of their offspring to the offspring of their sisters, a pattern Chagnon identified as increasing the inclusive fitness of those involved (Chagnon 1979a). Further, there is high variance in male reproductive success: some men are polygynous, some men never marry, many only marry later in life. In contrast all women are married young, and are married throughout their reproductive lifespans (Chagnon 1979a; Chagnon et al. 1979). Death, divorce, and remarriage result in what Chagnon referred to as the "decay of the nuclear family," such that, for instance, about half of children under 5 years of age do not live with both their parents in a monogamous nuclear family, and by age 15, less than 20% do. In pioneering work that set the foundations for the reemergence of interest in the study of kinship by evolutionary anthropologists beginning around 2000 and continuing to date (e.g., Sherk and Mattison 2011), Chagnon dissected the tensions this sets up between the ideal kinship structure and individual interests, applying sexual selection, inclusive fitness, parental investment, and reciprocal altruism theories to understand how and why individuals worked within and around the structural norms.

For example, Chagnon demonstrated why the ideal cross-cousin marriage system could not be strictly adhered to through time, so people would have to break the rules, and how they did so to favor their own fitness interests. Men married and began reproducing at an older age, and women younger, so age differences between eligible marriage partners become out of synch over a few generations, with eligible wives increasingly older than their eligible husbands through time. If rules of cross-cousin marriage were strictly adhered to, this would eventually lead young men to marry old women, resulting in reproductive failure. Marrying someone other than one's classificatory cross-cousin is proscribed as "incest." To avoid this, use of kin terms other than those proscribed by actual genealogical connections, or kin term "misclassifications," were therefore inevitable. Further, because Yanomamö were genealogically related to other individuals in multiple ways (e.g., Chagnon 1979b), there could be choices about the appropriate kin term to use for another individual, as well as conflict over those choices. In line with his predictions, Chagnon found that when men made misclassifications they did so in line with their reproductive interests, tending to "misclassify" young women into the marriageable kinship category *suaboya* (i.e., "wife," or female cross-cousin) for themselves or their sons, to bring more women into the marriageable category (Chagnon 2000). Further, because men's marriage opportunities were critically based on their knowledge of, and ability to manipulate, kinship, their knowledge of genealogical relationships meant they were quicker at accessing this information than women (Chagnon 1988, 2000). As Chagnon notes, while the genealogical facts of biological relatedness can't be changed, kinship classifications can, and many marriages otherwise considered "incestuous" by Yanomamö definition occur, apparently to increase men's chances of marriage (Chagnon 1972, 1974, 1979a, 1988).

Further, Chagnon (1979b) demonstrated that, as expected from kin selection, degree of genetic relatedness was an important variable in the organization of social aid. In his analysis of a fight that broke out between members of a host and visiting villages, immortalized in the film *The Ax Fight* (Asch and Chagnon 1975), Chagnon shows that active participants were much more closely related to their own side than to the other side of the dispute, and to the main figure in the fight that they supported than to the main figure they opposed. Further, the average degree of relatedness among fighters



from the host village was greater than to their village as a whole. Later reanalysis using more sophisticated statistical techniques (Alvard 2009; see also Walker and Hill 2014) confirmed the basic findings: in an instance where potential fitness costs to participants are high, closeness of biological relatedness rather than descent or kinship classification was the major relationship variable associated with who decided to come to each other's aid during the fight.

Chagnon and Neel were also both struck by the dramatic reproductive success of polygynous men, especially headmen, a pattern that had earlier been noted by Lévi-Strauss (1944) among the Nambikuara. Neel and Chagnon showed definitively that reproductive success was not necessarily equal in egalitarian societies. Using genealogies encompassing 3270 individuals from one subpopulation of Yanomamö, Chagnon found that 76% of a large, spreading group of Shamatari villages and 20% of the neighboring Namoweiteri population were descended in some way from one man. Moreover, the four largest patrilineal groups accounted for more than half of the total sample population, with the remainder of lineages much smaller (Chagnon 1979b). One man had sired 43 offspring, and males exhibited some six times greater variance in reproductive success than did females. Chagnon noted that male competition for females is a widespread feature of the biological world because females have a greater necessary minimal parental investment than do males, so the absolute “shortage” of Yanomamö women—evidenced by a sex-ratio bias of 126, especially in younger age cohorts in the most intensively studied villages (Chagnon et al. 1979)—and resultant competition for marriage among the Yanomamö shouldn't be seen as a special feature of this population (e.g., Chagnon 1979a).

Chagnon was careful to point out, however, that Yanomamö mate competition is not simply an individual matter: success depends on both aid from patrilineal male kin and reciprocity in wife exchange from other patrilineal lines (Chagnon 1980; Macfarlan et al. 2014). Chagnon described this as a biosocial process by which village fissioning separated people into groups that are more closely related to each other than those from whom they fission, and thus into groups with greater shared inclusive fitness interests (Chagnon 1979a). Indeed, headmen averaged twice the offspring as other men as a consequence of having more wives (Chagnon et al. 1979) acquired via these biosocial processes.

To the extent that Yanomamö provide insights into at least part of the continuum of ancestral human mating patterns, we should expect to see other indications of male intrasexual selection in humans. In the decades that have followed, researchers inspired by Chagnon's results have found overwhelming evidence supporting this view. Men have about 90% greater upper body strength than women, for example, suggesting an intense hominin history of intrasexual selection on males (e.g., Puts et al. 2015). People have adaptations allowing them to readily assess physical formidability from the body, face, and voice, and that one's formidability is an input for the regulation of one's deployment of anger, physical force, and the pursuit of political self-interest (e.g., Sell et al. 2009, 2017).

## Visual Anthropology

Chagnon made 39 ethnographic films in collaboration with Timothy Asch. Two, *The Feast* and *The Ax Fight*, became classics on par with *The Hunters* by John Marshall and

*Dead Birds* by Robert Gardner. In one of the many ironies of Chagnon's career, *The Ax Fight*, in its reflexivity and frank depiction of the filmmakers' confusion, is a harbinger of the "postmodern turn" that would grip anthropology decades later. As Jay Ruby (1995:29), a visual anthropologist, observed:

*The Ax Fight* is a truly remarkable film for a number of reasons. I know of no other non-fiction film that not only displays all of the footage shot but shows three different edited versions. . . . *The Ax Fight* undermines the naive belief in the objectivity of the documentary/ethnographic film. In addition, the film calls into question the adequacy of anthropological theory to explain complex human encounters. For example, nowhere in the film or in Chagnon's writings is the political role of women discussed. . . . In *The Ax Fight* their visibility confounds their invisibility in the literature. As Asch suggests, because of its deconstructive nature, *The Ax Fight* is prematurely postmodern.

## Theoretical Evolution

Chagnon's dissertation committee consisted of an all-star cast of anthropologists and one of the world's foremost geneticists. Chaired by Eric Wolf, it included Mervin Meggitt, Elman Service, Leslie White, and James Neel. Chagnon also took courses from Marshall Sahlins and Morton Fried (Chagnon 2013). These anthropologists, many of whom were students of Julian Steward (founder of cultural ecology), generally advocated a cultural evolutionary approach to anthropology. Explanations often invoked material resources and kinship structures, such as lineal descent groups. As Chagnon recounts it, his very first day in a Yanomamö village began to raise his doubts about much of this received anthropological wisdom. The village was on high alert for raiders because seven women had been abducted by neighbors the day before, and after a brutal club fight, five had been recovered. Chagnon quickly realized that lethal attacks were a constant threat, and that conflicts started not over material resources, but over women (Chagnon 2013).

Conflicts over women often caused village fissioning and motivated alliances-by-marriage, and were therefore key factors in understanding Yanomamö kin-based social organization. Although kinship, marriage, and descent were mainstays of anthropological research, Chagnon wanted to quantify them to test leading theories. One of Neel's pivotal theoretical influences on Chagnon involved Chagnon's computation of inbreeding and relatedness coefficients from his genealogical data. Although Chagnon initially believed that lineage and descent helped unite Yanomamö communities, the coefficients began to change his mind: close genetic kinship seemed to be more important than descent (e.g., Chagnon 1975).

Unfortunately, Chagnon's relationship with Neel began to fray. According to Chagnon, Neel showed little respect for anthropologists, regarding them as assistants rather than collaborators (Chagnon 2013). In 1972, Chagnon left Michigan for Penn State, where he hired a former graduate school colleague, Bill Irons, who shared Chagnon's commitment to scientific anthropology. Both men were intrigued by new developments in theoretical biology, especially contributions by George Williams and



William Hamilton. They were also drawn to work by Tiger and Fox (1966) and other anthropologists and social scientists who were beginning to think about human behavior in Darwinian terms. Chagnon found three ideas from theoretical biology to provide special insights for anthropology. The first was Williams's argument that selection was much stronger at the individual level than at the group level (Williams 1966), contrary to much theorizing in anthropology that emphasizes the group over the individual. The second was Hamilton's theory of kin selection (Hamilton 1964), which Chagnon thought would provide a firm scientific foundation for studies of human kinship. And the third was Darwin's insight that it is males, rather than females, that typically compete for mates, often violently (Darwin 1871).

E. O. Wilson dubbed the revolution in evolutionary biology sparked by Williams, Hamilton, and many others, *sociobiology* (Wilson 1975). Shortly afterward, Chagnon and Irons organized meetings devoted to sociobiological approaches to human behavior, and ultimately produced an edited volume that helped create what is now known as human behavioral ecology (Chagnon and Irons 1979).

In 1981 Chagnon moved to Northwestern University, which put him back in touch with Richard Alexander at the University of Michigan. Alexander was a prominent evolutionary biologist who was one of the few willing to theorize about human behavior in evolutionary terms. A few years later, Chagnon moved to the University of California at Santa Barbara, where he would join Donald Brown, Donald Symons, John Tooby, and Leda Cosmides, a group of anthropologists and psychologists who were developing the foundations of what would soon be known as *evolutionary psychology*. In 1995, Steve Pinker spent a year in Santa Barbara as a fellow of the Center for Evolutionary Psychology. Chagnon's influence on Pinker is clear in Pinker's subsequent popular books on evolution and human behavior, including *How the Mind Works* (1997), *The Blank Slate* (2002), and especially *The Better Angels of Our Nature: Why Violence Has Declined* (2011) and *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress* (2018).

## Ethnography

Chagnon's exquisitely written, scientifically rigorous, moving and very human ethnography of the Yanomamö (Chagnon 1968a), updated multiple times over some 30 years, remains the best-selling anthropological text, having introduced generations of students to cultural anthropology. In lucid, riveting prose, it seamlessly integrates detailed empirical data and theory on key topics in cultural anthropology—and in later versions, key evolutionary concepts—with fieldwork methodology, and the personal costs and scientific importance of collecting this data. In so doing it elegantly weaves together the interrelationships among, and the emic and etic logic of, a wide range of cultural phenomena—including social structure, marriage, kinship, status, coalitions and alliances, shamanism, ritual, feasting, settlement patterns, and warfare. Importantly, the original subtitle of the book, “The fierce people,” reflected how Yanomamö men, at least, presented and preferred to see themselves.

Chagnon introduces the reader to the Yanomamö as he met them, from first encounter through the process of personal and cultural understanding. Initially a “non-person” asking ridiculous questions, the bawdy answers to which make him the

subject of humor (“What do you call him?” the anthropologist duly notes and repeats to the hilarity of all, “eagle shit,” “fart breath,” or “asshole,” only later to find out 5 months of census and genealogical work would have to be thrown out and started anew), Chagnon eventually learns how to act, and to become, in the eyes of at least some Yanomamö, “almost human.” In the process, the reader too comes to know and understand Yanomamö culture and individuals. Remarkably, Chagnon achieves this while clearly explaining complex anthropological concepts and debates, and the data to address them, to undergraduate as well as professional readers. Bringing this alive for the reader, Chagnon summarizes and updates his primary research in the form of a scientific tale of personal history, adventure, and cultural coming of age.

In *Studying the Yanomamö* (1974) Chagnon revealed the personal costs, interpersonal frictions, risks taken, methodological attention to detail, and dogged persistence his work required. As cellular phones, Internet service, and social media overtake the world, it’s easy to lose sight of the challenges Chagnon faced conducting research in the 1960s with a remote, politically independent, autonomous society. And, although he doesn’t dwell on it, we should remember the familial costs of spending so much time away from his wife, Carlene, and his children, Darius and Lisa, over the years, while Chagnon was incommunicado in the field, as well as the trust and support Carlene provided during these times.

One of the most striking endorsements of Chagnon’s ability as an author and ethnographer, coupled with the films Chagnon made with Tim Asch, is the overwhelming sense of *deja vu* that we and others experienced when actually visiting the Yanomamö. People often ask, and the answer is an emphatic “Yes!”: Are the Yanomamö indeed just like we come to know them in Chagnon’s book?

Chagnon, to paraphrase Walt Whitman, was large—he contained multitudes. Warm, funny, eloquent, and insightful one minute, angry, suspicious, and, dare we say it, fierce the next, Chagnon instilled great loyalty in most friends and colleagues, but dislike and sometimes loathing in others. Most of us who were close to Nap just accepted him as he was, or quickly developed thick skins. Chagnon entered the field in his early twenties and came of age under the tutelage of renowned Yanomamö headmen and shamans such as Kaobawä and Dedeheiwä. We had the privilege of working with Nap for more than 20 years, and also working with some Yanomamö during stints of fieldwork. In our experience, the Yanomamö had similar mixed feelings about Chagnon, but all recognized him as one of their big men. In Shaki’s passing, the Yanomamö have lost one of their own.

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