



BIOGRAPHICAL MEMOIRS

NAPOLEON A. CHAGNON

August 27, 1938–September 21, 2019

Elected to the NAS, 2012

A Biographical Memoir by Raymond B. Hames

NAPOLEON A. CHAGNON had one of the most multifaceted and influential careers of any anthropologist I can think of. He authored the most-read ethnography ever written in the history of our field: more than a million copies of *Yanomamö: The Fierce People* have been sold.¹ Since its publication in 1968, it has gone through six editions ending with *Yanomamö*.² Each edition contains minor to major updates on his research findings and his developing theoretical perspective. Six of his thirty-two films with Tim Asch won multiple national and international awards. He was one of the first ethnographers to use mainframe and laptop computers to analyze his voluminous genealogical and demographic data. He also developed a free desktop computer program to analyze such data. His fieldwork monograph, *Studying the Yanomamö*, guided new and veteran researchers through the process of building sociodemographic databases.³ His collaboration with James Neel on Yanomamö genetics represented anthropology's holistic approach, often touted but seldom realized. In the course of his career, he played a pioneering role in applying evolutionary biology to human social behavior that was foundational in the development of behavioral ecology in anthropology.

LIFE HISTORY

Chagnon was born on August 27, 1938, in rural Port Austin, Michigan, and was the second of twelve children of Rollin Peter and Mildred Elizabeth (Cavanaugh) Chagnon. In that rural environment, he developed outdoor skills that contributed to his family and would also serve him well in the



Figure 1 Napoleon Chagnon.

forests of the upper Orinoco Basin, where he visited scores of Yanomamö villages during his approximately five years in the field over nearly two dozen field trips.

Chagnon self-funded his college career. He learned surveying the summer after high school graduation and was hired as a surveyor for road construction, and this became his summer job throughout college. His college career began at the Michigan College of Mining and Technology as a physics major and then, in his sophomore year, he transferred to the University of Michigan. There, he was captivated by cultural evolutionist Leslie White and decided to change his major to anthropology. At that time, Michigan cultural anthropology

had deep empirical and scientific roots based in the ecological perspectives of Julian Steward.

Chagnon initially planned to do research among the Suyá of Brazil, but a military coup thwarted his plans. After consultations with James Neel of Michigan's Department of Human Genetics, he decided to pursue research on the Yanomamö in conjunction with Neel's planned collaboration with Venezuelan researcher Miguel Layrissé. He entered the field in 1964 for seventeen months of fieldwork and was granted his doctorate in 1966. Very soon after his dissertation defense, he returned to the field and was joined by Neel's team. This early research focused on genetics, demography, and health. His knowledge of Yanomamö culture and language, along with his rapport with them, permitted Neel's team to efficiently complete their frequent sample collections and health evaluations for a number of years.

After completing his thesis, Chagnon taught for several years as an adjunct faculty member in the Department of Human Genetics and Anthropology at the University of Michigan. In 1972, he took a tenured position in the anthropology department at Pennsylvania State University. In 1981, he joined the anthropology faculty at Northwestern University. The move to Northwestern was crucial for his further intellectual development through his friendship with Richard Alexander. Along with Bill Irons, his close friend and intellectual colleague, the three initiated a series of yearly meetings among evolutionary-minded researchers rotating between Michigan and Northwestern that later evolved into the Human Behavior and Evolution Society. Chagnon later taught at the University of California, Santa Barbara (UCSB) and was a research professor at the University of Missouri at the time of his retirement.

FIRST CONTACT

In 1972, I was completing my doctoral coursework at UCSB and had finished my field research proposal for work in the Amazon. Key for me was the identification of Amazonian groups with little colonial contact and advice on dealing with research permits and local collaborators. I showed the draft to my advisor, Elman Service, whereupon he produced a list of about half a dozen of his former doctoral students who had done Amazonian research for me to contact.

As the letters came in, I was disappointed by the brief and rarely helpful responses. One of the last was from Chagnon. Produced on an IBM Selectric, the letter was a single sheet, single spaced, and printed on both sides. It was loaded with useful information about groups, in-country contacts, and ongoing research. At the end of the letter, he said he had received funding for his own research group for a long-term project among the Yanomamö and had an interest in the kinds of research I planned. He ended with, "Good luck

in finding your own group to study." I was both elated and disappointed. Little did I know that shortly after he sent the letter, he had phoned Elman Service to get a better read on my fitness for field research. About a week later, I received a gracious invitation to join his Penn State project with full funding to do the research I had outlined. After I finished my dissertation and landed academic employment, we worked together for four more field seasons through a joint National Science Foundation award.

RESEARCH ORIENTATION

One feature that stands out in Chagnon's work on social organization is his quantification of marriage, demography, kinship ties, and historic settlement patterns. In terms of sample size and multi-village surveys, his approach was then unprecedented in cultural anthropology. A crucial theme of his approach was to not simply document ideal models of cultural behavior but to counterpoise the ideal against the real or what he called a statistical model of cultural behavior. This emphasis is stated in the very first sentence of the abstract of his dissertation⁴:

"The purpose of this analysis is to show that the large discrepancy between ideal marriage rules and actual marriage practice [which]... is necessitated by the politico-military milieu within which marriages are contracted."

The usual practice in cultural anthropology at the time was to characterize ideal cultural rules, for example, of whom one should or should not marry. Chagnon noted such rules often could not be followed because of demographic variation or political considerations and, just as importantly, culture was a system to be manipulated as well as followed. For example, influential individuals manipulated genealogies to move women from a culturally ineligible to an eligible marital relationship. The marriage system was also driven by competition for mates exacerbated by polygyny and an imbalanced sex ratio favoring men. These manipulative tactics were elaborately described in his book chapter "Man the Rule Breaker" and later in two publications demonstrating that in order to manipulate one had to have a deep actuarial knowledge of historic kinship and marital patterns as well as expertise in ideal cultural rules.⁵ Individuals both followed culture and manipulated it for their own selfish ends. One might consider this an early application of human agency in anthropology.

Later Chagnon was strongly influenced by Hamilton's theory of inclusive fitness. Through his work with Neel, he knew the importance of genetic relatedness as well as the Yanomamös' emphasis on consanguinity in marriage and

alliances. His first application of inclusive fitness theory examined village fissioning by showing that as village size increased mean relatedness decreased and intra-village conflicts increased.⁶ These factors led to village fissioning, and the newly created smaller villages were more harmonious as a result of higher mean relatedness. In addition, the villages did not fission solely along expected patrilineal lines but along lines of existing marriage alliances with other lineages, which reduced local competition over mates. A second application came in his analysis of *The Ax Fight* film with Paul Bugos in which he demonstrated that coalitional support depended on genetic relatedness: individuals supported the fighters who were more closely related biologically to them rather than strict Yanomamö notions of kinship classification.⁷

WARFARE

Chagnon is best known for his study of Yanomamö warfare and politics. The Yanomamö were ideal for understanding warfare in an egalitarian society because villages were politically autonomous, which allowed them to pursue politics without interference from the state. He demonstrated how war penetrated many levels of Yanomamö life, including settlement patterns, kinship, marriage alliances, trade specialization, and myth. On the first page of his dissertation, Chagnon argued that the major cause of Yanomamö warfare was male-male competition for wives, a factor largely ignored in the study of warfare.⁸ He argued that a high male sex ratio and polygyny led to high levels of competition for wives. This perspective was markedly different from the then-current explanations based on competition over scarce material resources. In 1979, he and I published an article in *Science* casting considerable doubt that warfare among the Yanomamö and elsewhere in Amazonia was a consequence of competition of scarce game resources.⁹ Elsewhere in a paper on reproductive and somatic conflicts of interest,¹⁰ Chagnon also stressed that although material competition was a common cause of warfare in many societies, reproductive competition was crucial for groups like the Yanomamö.

Later, to complicate his views on warfare, he noted that revenge is also part of the explanation of Yanomamö warfare¹¹:

“Disputes and fights over women are a major cause of Yanomamö fighting and warfare, but they are not the only causes. If I had to specify the single most frequent cause of lethal conflicts, it would be revenge for a previous killing.”

Frequently, revenge and reproductive disputes are interrelated. For example, if one fails to fulfill a betrothal agreement or abducts a woman, those actions may ultimately lead to a killing on the part of the disaffected party, leading to a classic

cycle of revenge. Over time, the root cause is ignored by the feuding parties. In my experience, the Yanomamö never forget who killed a kinsman, and this memory is powerfully reinforced by near daily evening ritual mourning by aggrieved kin well after the killing of close kin so long as the death goes unavenged.

Chagnon’s most cited journal article on blood revenge is also his most controversial.¹² Therein he tested his colleague William Irons’s theory that individuals who achieve cultural success would also achieve reproductive success: a proximate means to an evolutionary end. Irons’s theory posited that achievement of highly regarded cultural values such as leadership, economic productivity, shamanism, generosity, wealth accumulation, or technical skills leads to reproductive success. Importantly, the ranking of these achievements are culturally determined. Among the Yanomamö, Chagnon argued that being a successful warrior is one of their highest cultural values. He used the proxy of *unokai* status, indicating a warrior who had participated in the killing of an enemy and had undergone a purification ceremony. Compared to non-*unokai* men, *unokai*’s had greater fertility and number of wives. This demonstration also reinforced his earlier finding that even in an egalitarian society there was significant inequality in reproduction among men. The research design for the claim has been questioned, and Chagnon responded, but further data analysis is warranted. Nevertheless, Irons’s cultural success model first tested by Chagnon has been supported by others, including a meta-analysis encompassing thirty-three societies.¹³

METHODS

Chagnon had a pioneering interest in methods for the quantitative study of social organization. He wrote an entire monograph entitled *Studying the Yanomamö* on his field methods.¹⁴ He is among the first cultural anthropologists to compile computer databases on individual demographic and social events, with up to twenty-five variables for each of the 4,000 individuals in his database. To analyze these data, he employed several computer programmers to develop KINDEMCOM, a program that could generate fundamental demographic data as well as chart kinship links to determine the frequencies of marriage patterns, coefficients of relatedness, and family composition.¹⁵ Many of his students and colleagues used the program for their own research. Unfortunately, the program was written in Pascal and only ran on Microsoft DOS machines. Edward Hagen, one of his students, developed Descent, a program version capable of running on modern Windows and Apple operating systems.¹⁶

In the Amazon, there is more to field methods than survey forms and FORTRAN coding sheets. Keeping oneself clean, healthy, and fed requires self-sufficiency and innovation. If



Figure 2 Napoleon Chagnon using his solar rechargeable laptop in the field.

your outboard motor won't start or the canoe's transom splits, you fix it. As an example, in the early 1980s we were one of the first to use solar rechargeable laptops in the field. Unfortunately, his dual-diskette model had open bays. Once, as he was about to insert a diskette, he spied a couple insect legs sticking out of his computer—a cockroach in the drive bay! Inserting a diskette would have crushed the critter and ruined the read-write heads. So, he rolled up a strip of duct tape, sticky side out, and I gave him some of my precious peanut butter as bait on the tape. The cockroach quickly sensed the meal and crawled out, getting stuck on the tape. He literally debugged his laptop! (See Fig. 2 for the laptop and trusty duct tape roll.)

Methodologically, his film with Tim Asch, *The Ax Fight*, represents his ability to turn humanism into science. The film was of a spontaneous armed brawl between two village factions shown three times. The first is the raw, unedited sequence of events as Ash and Chagnon witnessed them along with their immediate and sometimes inaccurate interpretations. Through the edited second and third sequences, he identified actors and their social ties, captioned the accusations and insults made by participants, and provided a kinship diagram of the factions. Later he published an analysis of the film demonstrating the role of inclusive fitness theory in accounting for how participants aligned their coalitionary support between the combatants.¹⁷

One thing that will strike even a naïve viewer of *The Ax Fight* is the central role women play. Women initiated the conflict, modulated it by encouraging their men-folk to fight, insulted one another, and physically participated in the violence. In 1983, with Chagnon, we visited the village where the fight took place and were able to meet and interview several of the women who played active roles in the film. I learned those women had political agendas of their own that

did not necessarily match those of their male kin or affines. In his accounts of politics, Chagnon largely ignored women as potent informal leaders.

FILMS

Although Chagnon was fundamentally a scientific researcher, he also had a humanistic and artistic side. With ethnographic filmmaker Timothy Asch, he produced thirty-nine films on the Yanomamö. Six of those films won at least one award, with *Yanomamö: A Multidisciplinary Study* winning eight, *The Feast* six, and *A Man Called Bee* four. These films have become university classroom staples. His dramatic still photographs were of sufficient quality to be published in *National Geographic*, *Scientific American*, and *Natural History*. Many of the films dealt with dramatic political events, some of which were filmed in real time. In *The Feast*, two leaders who were former enemies converse about common enemies and the need to collaborate in mutual raids and defense even though those two villages had warred amongst themselves. There are scenes of vigorous trade negotiations in which visitors make demands for trade goods to test the sincerity of their hosts in establishing an alliance. In *A Multidisciplinary Study*, the viewer is treated to the holistic nature of collaborative research, a hallmark of anthropology that is often touted but seldom realized.

DARKNESS IN EL DORADO

Of course, I must mention *Darkness in El Dorado*, a fundamentally dishonest book about how scientists allegedly mistreated the Yanomamö.¹⁸ Tierney accused Chagnon and James Neel of starting a measles epidemic to test a eugenics theory and other heinous crimes. Fortunately, investigations by the National Academy of Sciences and other scientific bodies quickly found the central claims to be false and/or impossible. Nevertheless, the Executive Committee of the American Anthropological Association ordered a poorly organized “investigation” by appointing a task force to review the book's claims of ethical breaches, even though such an ethics adjudication was not permissible in their bylaws. I was on the task force but resigned when I realized I would be participating in a “show trial.” The Task Force Final Report was accepted by the AAA Executive Committee in 2002. The report found, among other things, that Chagnon's publications harmed the Yanomamö through his detailed portrayal of their violence. The issues are complex, but I would encourage anyone interested to read science historian Alice Dreger's account.¹⁹ As one might imagine, the entire fiasco was extremely stressful to Chagnon. Some relief came from Amazonian experts Daniel Gross and Thomas Gregor when they published a devastating critique of the AAA's actions.²⁰ This was followed by their referendum to demand

that the acceptance of the Task Force Final Report by the AAA Executive Committee be rescinded. The vote was put to the AAA membership and about 70 percent voted to rescind the acceptance. The irony in this entire affair is that Neel and Chagnon should have been thanked by the AAA with a humanitarian award for ending a measles epidemic through their scientific research, preparedness, and active concern for the health and wellbeing of the Yanomamö.

NOBLE SAVAGES

His last monograph, *Noble Savages: My Life Among Two Dangerous Tribes—the Yanomamö and the Anthropologists*, was somewhat of a mixed bag.²¹ As the title indicates, it is an account of research among the Yanomamö and dealing with other tribal members or hostile anthropologists and institutions. Its major value comes in his lively descriptions of practical fieldwork difficulties, engaging portraits of chief informants and dear friends, as well as candid accounts of problems he had trying to remain an outsider while deeply embedded in Yanomamö life. Although some of these accounts are sketched in his other works, it makes for an engrossing read with added detail. To an extent, there is also score settling with his critics, who are largely dismissed as being unscientific without a compelling analysis of their critiques.

INTELLECTUAL LEADERSHIP

Nap's role as a leader in the development of evolutionary approaches to human behavior cannot be overestimated. He was a founder of behavioral ecology in anthropology. Influenced by the early work of Robin Fox and Lionel Tiger and later of E. O. Wilson and Richard Alexander, he and William Irons organized two historic sessions on evolutionary approaches to human social behavior at the 1975 annual meeting of the American Anthropological Association. The papers in that meeting resulted in an edited volume.²² And twenty years later, they held a double session at the AAA assessing the twenty years of accomplishments and future of their field resulting in another edited volume.²³

Between the publication of the two volumes, Chagnon and colleagues developed a series of invitation-only conferences held at Northwestern and Michigan universities on alternate years. These conferences brought together anthropologists, psychologists, and evolutionary biologists and ultimately led to the founding of the Human Behavior and Evolution Society in 1988 and the creation of the society's journal, *Evolution and Human Behavior*. Chagnon was elected president in 1993 and received the society's Lifetime Achievement Award in 2010.

Napoleon Alphonse Chagnon died in Traverse City, Michigan, on September 21, 2019. He and his wife Carlene lived in a picturesque house in the forest that they loved. Nap

and Carlene were married for fifty-nine years and had two children, Darius and Lisa, and five grandchildren. When he passed, he was a research professor in the Department of Anthropology at the University of Missouri, where he worked with colleagues and students to publish a variety of works and to archive his extensive data for scholarly use. He was elected to the National Academy of Sciences in 2012.

CONCLUSION

Chagnon was a Renaissance anthropologist who made numerous fundamental contributions to anthropology. His films and ethnography have been viewed by millions around the world. He combined a humanistic eye in research with an unwavering scientific approach to human culture and behavior. He set multiple standards for long-term field research in terms of methodological rigor and refinement. He made some of the first tests of inclusive fitness theory in human behavior. And he was a major force in the institutional establishment of evolutionary approaches in anthropology as well as the rest of the social sciences.

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