

# Cannibalism, kuru and anthropology

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## Abstract

*This essay discusses the image and practice of cannibalism in a wide range of studies. It also presents the anthropological research on kuru which led to the proposal that cannibalism had enabled transmission of the infectious agent, as well as doubts about the hypothesis, and the assertion by some that cannibalism as a socially approved custom did not exist. The figure of the cannibal as an icon of primitivism took form in the encounter between Europe and the Americas. Cannibalism was to become the prime signifier of “barbarism” for a language of essentialized difference that would harden into the negative racism of the nineteenth century. Anthropological and medical research now challenge the derogatory image of the cannibal as we learn more about the many past consumers of human flesh, including ourselves.*

**Key words:** cannibalism, kuru, anthropology, medicine, history.

## Introduction

The figure of the cannibal as an icon of primitivism took form in the encounter between Europe and the Americas, and became a defining feature of the colonial experience in the New World. The idea of exoticism, like that of the primitive, is also a Western construct linked to the conquering, cataloguing impulse of colonialism. Today, however, we share a world with those we once viewed as exotic or primitive. They live among us, defining their own identities, precluding our ability to define ourselves in opposition to “others” and to represent our own culture as universal [38]. The image of the cannibal is thus undergoing change, while it continues to elicit a variety of responses in scientific and popular reports. This essay provides an anthropological view of the image of cannibalism in kuru research as well as its status in a wider range of studies.

The essay begins with an account of the anthropological research on kuru by Robert Glasse and myself, which led to our proposal that cannibalism had enabled transmission of the infectious agent. Inspired by the first published report of kuru by Gadjusek and Zigas in 1957 [14], Henry Bennett, a geneticist at Adelaide University, provided the grant for our fieldwork in the kuru region, which began in 1961. Bennett had asked that we study kinship, hoping that we would provide data to confirm his genetic hypothesis concerning disease transmission [9]. Epidemiological data provided in Gajdusek’s early studies led us to choose a research base at Wanitabe in the South Fore, Papua New Guinea, where the incidence of the disease was at that time at its height. We set about learning Fore kin terms, drew genealogical charts, observed kinship in action, and began to

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learn something of Fore domestic and political relations. Bennett had requested that we document Fore “pedigrees,” a clue to the problem that lay ahead. It soon became apparent that Fore kinship was quite flexible, and that many of the kuru victims were not closely related biologically, but were considered by the Fore to be kin in what we would call a “social sense.” Nestled within the political units composed of people considered to be kin, immigrants from nearby or distant Fore hamlets were welcomed as long as they demonstrated loyalty and observed their new social obligations. In time, these immigrant groups were said to possess “one blood” and to stem from a common ancestor, conveying the idea of the unity of those who reside and act together, and who also share the bodily substance of those who eat food grown on the same land. In addition, the Fore readily permitted adoption of children “orphaned” by the death of their mothers. A more frequent kinship elaboration occurred among individuals with no known consanguineal relationship during a ceremonial exchange of food and wealth. Fore genealogies, it seemed, were social documents that gave legitimacy to claims and obligations based on culturally-defined notions of kinship. They provided a moral guide for living, but were not reliable statements of genetic proximity.

### The recent arrival of kuru

Our doubts about the genetic hypothesis were increased by data we began to gather in 1962 which indicated that kuru had spread through Fore villages within living memory, and that its progress through Fore territory followed a specific, traceable route [20,21]. Stimulated by the Fore’s own compelling descriptions of their first encounters with this new disease, we spent some weeks following the described route, collecting historical accounts. The Fore reports indicated that kuru had entered their territory from Uwami, a Keiagana village to the northwest, around 1900 and appeared in the North Fore around 1920. It then traveled down the southeastern border, arriving at Wanitabe in the central South Fore by 1930. The first cases at Purosa, six miles further south, were also said to have occurred in 1930, although in some southwestern and southeastern areas, it was said to have arrived as late as the 1940s. This finding was again at odds with a purely genetic model which implied that kuru must have been of remote evolutionary origin, and that it ought to have been in epi-

demiological equilibrium. However, as John Mathews observed later [40], kuru was too common and too fatal to be a purely genetic disorder unless the hypothetical kuru gene was maintained at high frequency by a mechanism of balanced polymorphism, for which there was no evidence.

The Fore descriptions of their encounter with the new disease were rich in detail. They could name for us and for later investigators those who had died of kuru, and those who had participated in the consumption of the deceased person. It was then possible to provide a coherent account for the appearance of the disease in particular hamlets some four to twenty years after the ingestion of cooked human tissues containing the transmissible agent [39]. It is now thought that kuru first arose in a single individual from a spontaneous change that created a pathogenic, infectious agent in the brain, in the same way that sporadic Creutzfeldt-Jakob disease occurs. The recycling of the infectious agent through the consumption of deceased relatives amplified the agent and the disease in the community, leading to the epidemic [5].

### Kuru and cannibalism

Although we had not come to the Fore to focus attention on cannibalism, during 1961 and 1962 we collected detailed information about the practice, and continued to do so in 1963. On April 10<sup>th</sup>, 1963, we sent a report of our fieldwork [23] to John Gunther, the Director of Public Health in Papua New Guinea, and the source of our grant money for the second year of research. The report noted that we were continuing to gather information on many topics begun earlier, including the origin and spread of kuru, cannibalism and kuru, the social effects of kuru, kinship studies, myths, the lives of women, and concepts of disease treatment. On cannibalism and kuru we noted that “extensive data has been collected on the possibility of an association between cannibal practices and the spread of kuru. As these practices vary considerably in the kuru region and in adjacent areas, an attempt will be made to relate these findings to variations in kuru prevalence. The data collected from the borders of the kuru region are of particular interest, and these will be discussed in relation to kuru.” We published papers on these topics [22,24-26,28,35,36].

Our thinking about the relationship between kuru and cannibalism rested heavily on data we had collected concerning Fore rules for the consumption

of human flesh, which seemed to fit the epidemiological evidence. Cannibalism was no longer present in the 1960s, having been recently suppressed by the government and missions, but the Fore spoke openly about their well-remembered practices of consuming deceased relatives. It was not until some years later, after the Fore had more contact with missionaries and with populations beyond the Eastern Highlands, that younger generations would experience some misgivings about a cultural practice they understood others to regard as unacceptable. The first government patrols in the late 1940s, however, reported cannibalism to be customary in much of the region. Beyond the Fore, it was the practice to consume enemies (exocannibalism), not deceased kin (endocannibalism), which was the Fore pattern, with consequences for transmission of the disease. By the 1950s cannibalism had ceased in the North Fore, but was still practiced surreptitiously in the South. The South Fore said that they continued to hide and eat deceased kin until the mid-1950s when a road was built to provide access from the government station at Okapa in the north to the southern hamlets at Purosa. Thus, in the South Fore, the area with the highest incidence of kuru in the 1960s, cannibalism had continued longer than in the north.

The Fore said they did not eat those who died of dysentery, leprosy, and possibly yaws, but kuru victims were viewed favorably. All body parts were eaten, except the gall bladder, which was considered too bitter. Most significantly, not all Fore were cannibals. Cannibalism among adult men in the North Fore occurred more frequently than it did in the south where adult men rarely ate human flesh, and those who did said they avoided eating the bodies of women, which would diminish their strength. Small children residing in houses with their mothers ate what their mothers gave them. Initiated youths then moved to the communal men's house at approximately age 10, leaving behind the world of immaturity, femininity, and cannibalism. Consumption of human flesh was thus largely limited to adult women, children of both sexes, and a few adult men, a pattern that matched the epidemiology of kuru in the early 1960s [36].

### **Doubts about the cannibalism hypothesis**

We spoke about our findings to a variety of audiences. From April to June, 1962, we took a break from fieldwork at the invitation of Professor Bennett to participate in workshops held at the University of

Adelaide, and wrote a series of papers in response to questions by Bennett and others concerning the nature of the kuru epidemic (see references above). These early papers were circulated in mimeographed form and later duplicated by the National Institutes of Health, as were the papers we wrote in 1963 [21,22,29]. We also reported our findings to scientists visiting the Fore region. We discussed our data with Richard Hornabrook during his preliminary visit to the region in early May, 1963, and also with a group of medical investigators who visited our field site at Wanitabe on 21<sup>st</sup> May. This group included F. MacFarlane Burnet, Robert Walsh, Ralph Doherty, Jonathan Hancock, the demographer Norma McArthur, and Michael Alpers, who had arrived in Okapa at the end of 1961, and would soon make his own significant clinical and epidemiological contributions to the study of kuru.

Our views concerning kuru and cannibalism sometimes met with skepticism.

Burnet wrote later that "some, like the present writer, initially found the suggestion incredible but must confess now to at least an open mind on the matter" [11]. In his history of kuru research Warwick Anderson notes that even at the time, Burnet allowed that the Glasses' research had impressed him. Tropical medicine, he thought, could benefit from these techniques [6]. Also unknown to us, Bennett was apparently losing faith in his genetic theory and was secretly receptive to the idea [6].

Perhaps the most surprising resistance to cannibalism as the mode of disease transmission came from Gajdusek. Following the successful transmission of the infectious agent to chimpanzees through inoculation in 1966 [16], and two publications that had proposed the connection between kuru and the consumption of deceased kin [1,39], Gajdusek began to speak informally about an alternative route of disease transmission at scientific conferences where his remarks were transcribed and reported. At a meeting held in December 1968 (published in 1971) while introducing a speaker, in order to support the idea that parenteral inoculation was the primary means of kuru transmission, Gajdusek introduced the notion that brain tissue was purposely rubbed on the body of the mourners during mortuary ceremonies. While the handling of infectious body parts at mortuary feasts could possibly be a means of occasional self-inoculation, Gajdusek had begun to overstate the

case. The contamination of women and children with highly infective tissues during the rite of mourning for dead relatives was “the mechanism and perhaps the only mechanism, of transmission and widespread dissemination of kuru... since a group of people butchering their dead with bamboo knives and their hands alone and smearing themselves with the brain and visceral tissues, scratching and mutilating themselves (amputating fingers and scarifying the forehead) and eating these tissues with their contaminated unwashed hands, could not but suggest possible infection to anyone who saw it... we cannot escape the probability that herein lay the source of most, or all, infection” [17].

A second reference to contamination during the handling of bodies during mortuary ceremonies occurs in a late addition Gajdusek made to the proceedings of a conference held in 1967, published in 1969 [19]. Here, he took note of the fact that experimental oral transmission of kuru through the feeding of infected brain tissue by oral tube to the chimpanzee had been attempted two years earlier but the results might not be forthcoming for several years.

A decade later Gajdusek took a firmer stand that “even today we have no evidence that eating bodies caused the spread,” and repeated earlier comments about the rubbing of infective body fluids and tissues during mortuary feasts into cuts, scratches, or the conjunctiva [18]. However, the practice of smearing body substances during mortuary ceremonies was never observed in the field by Robert Glasse and myself, nor did the Fore refer to it when describing earlier ceremonies. Alpers and Whitfield have also been unable to confirm the practice of smearing brain tissues; in fact they found it was firmly denied [50].

Gajdusek’s resistance to the idea that oral ingestion had provided the route of disease transmission has elicited speculation from many who knew him. Anderson observes [7] that Gajdusek and his colleague Ralph Garruto, a biological anthropologist, both found it difficult to imagine how social and cultural studies could be rendered commensurate with contemporary biological research and pathological findings. One of Gajdusek’s first hypotheses for kuru was the development of autoimmune encephalopathy as a result of sensitization from eating human brain. This thought appears to have been so dominant in his mind that he dismissed the possibility that cannibalism could play a different role in the aetiology [15]. In addition, having been unable to obtain more than a few accounts of

earlier cases of the disease, he lamented in 1963 that it was impossible to reconstruct a fully reliable past history in the kuru region, where tradition and genealogical memory were shallow. He thus did not respond to Alpers’ 1962 communication urging him to take seriously the Glasse’s argument that kuru was a recent, emerging disease [6]. Alpers’ more embracing intellectual vision of kuru research led him to observe that the work of the anthropologist was as crucial to the solution as that of the epidemiologist, the pathologist, and the virologist [2].

Alpers suggests that Gajdusek discounted cannibalism because he thought the idea was too exotic [45,6]. Kuru was already a strikingly new clinical disease, restricted to a remote population of an exotic island, and with a strange epidemiological pattern. Ironically, he was attracted to exotic places and “primitive” peoples, spending most of the 1950s drawing blood from tribesmen in South America, the Middle East, and the Pacific, where he encountered other challenging exotic diseases that demanded complex explanations.

The sensitivity of the topic may also explain some of Gajdusek’s unwillingness to accept the role of cannibalism in spreading kuru. In recent years many well-documented accounts of the practice of cannibalism have been published by anthropologists who once thought the topic was too delicate to discuss, given the image of the cannibal as an icon of primitivism [38]. The sensitivity of the topic may also explain Gajdusek’s reluctance to elaborate alleged Chamorro bat-eating for the emergence of Guam amyotrophic lateral sclerosis. It could be said that he thereby avoided pathologizing the social life of vulnerable people on the margins of prosperous communities in colonial settings, but was left with an impoverished sociological understanding of the disease. Anderson suggests that the ecological and anthropological mantle Gajdusek had adopted on first encountering the disease had shifted to microbe hunting [7]. Also taking a historical view, Nelson observes that strangely, this restless, wide-ranging mind did not make the early, unorthodox connections with scrapie and with cannibalism, but he deserved the prize [42].

### Denial of cannibalism

Gajdusek did not doubt that the Fore consumed deceased relatives. His resistance settled only on the

idea of cannibalism as the mode of disease transmission. However, the notion, proposed in 1979 by anthropologist William Arens [8], that cannibalism as a socially approved custom did not exist, was finding a receptive audience even among some anthropologists [46]. Since no first-hand account of the practice had been reported, cannibalism was said to be an invention of the anthropological, missionary, and adventurer's imagination. The argument is no longer accepted, in part because we can agree that many behaviors that anthropologists write about may not have been observed firsthand, sexual intercourse among them. If Fore self-described reports about consuming their own deceased kin during mortuary ceremonies were to be dismissed, it would establish a curious, much diminished view of anthropology as excluding the field of ethnohistory. And despite the assertion that the evidence on this purported custom would never stand up in a court of law and would be too flimsy to merit a news report [8], such accounts of cannibalism in Papua New Guinea were readily available. A 1978 episode of cannibalism reported in Australian newspapers noted that the essential facts of the case were undisputed (the remaining body parts had been produced as evidence). The Australian judge was thus bound to convict the 3 accused men, despite his acknowledgment that they saw nothing wrong in what they did, and were ignorant of the introduced law outlawing cannibalism [47].

The debate within anthropology about the "reality" of cannibalism in the 1980s and 1990s reflected a general shift in perspective in the human sciences, which gave close attention to issues of metaphor and representation, and provided new life for the idea of cannibalism as a colonizing trope and stratagem. The figure of the cannibal, it seemed, allowed writers to think reflectively about other ways of life and different ways of being human. By the 1990s cannibalism was viewed as a calumny used by colonizers to justify their predatory behavior. Postcolonial studies proposed that "the figure of the cannibal was created to support the cultural cannibalism of colonialism through the projection of Western imperialist appetites onto cultures they then consumed" [34]. A common factor in the history of cannibal allegations is the combination of denial in ourselves and attribution of it to those we wish to defame, conquer, and civilize. In the so-called egalitarian 1980s and 1990s, and in an atmosphere of postcolonial guilt and imperial self-inculcation, denial about ourselves had been extended to

denial on behalf of those we wished to rehabilitate and acknowledge as our equals [44].

The anthropological debate about cannibalism at the time unfortunately diverted attention from a deeper analysis of collective ideas of prejudice. The assumption of the cannibalistic nature of others is one instance of a broader ideology which attempts to discredit political rivals and unfriendly neighboring communities. It thus belongs to a category of disparaging allegations about the malevolence of "others," such as ethnic groups to which the accuser does not belong, who from time to time in human history have been identified as witches, Satanists, heretics, and criminals. We have here an array of historical and cultural examples illustrating the seeds of racism, a topic that merits serious and sensitive enquiry.

### The west and the rest

The Enlightenment discourse about social progress depended on the figures of the "noble" and "ignoble savage," formulated in terms of the West and the Rest, and provided the language in which "modernity" first came to be defined [31]. Cannibalism was to become the prime symbol or signifier of "barbarism" for a language of essentialized difference that would harden into the negative racism of the nineteenth century [48].

A concern to avoid the disparaging connotations of the term "cannibalism" underlies recent discussion among anthropologists and archaeologists concerning the best choice of words to describe the practice. Some propose a separation of terms: "anthropophagy," or even "anthropophagous practices or incidents," should be reserved for the act of consuming human flesh, and "cannibalism" for the fantasies about others [33,43,51]. Alpers [3] offers the term "transumption" to describe "the mortuary practice of consumption of the dead and the incorporation of the body of the dead person," a practice which he notes had deep significance for the Fore people and their neighbors.

The figure of the cannibal long used to establish disparaging differences and construct racial boundaries can now be called upon in projects to deconstruct them. The stigma of savagery and primitivism may be best countered when we describe our own behavior and reflect on the historical reality of cannibal activities among Westerners, as well as among others. We may then be in a better position to dislodge the savage/civilized dualism, once essential to the formation of a modern Western identity and Western

forms of knowledge [38]. We know, for example, that medicinal ingestion involving human flesh, blood, heart, skull, bone marrow, and other body parts was widely practiced throughout Europe from the sixteenth to the eighteenth centuries. Human flesh from “mummy shops,” where the remains of embalmed, dried body parts from humans who ideally had met with sudden, violent death, was considered to be a universal panacea by the Paracelsians (followers of the sixteenth century German-born Swiss physician) who, in contrast to the Galenists, promoted the medicinal use of a variety of body substances. Samuel Johnson’s 1785 Dictionary of English includes a description for preparing mummy, indicating that it was still being sold at that time, and it was still available in 1909 from a reputable German pharmaceutical company [30]. Placentophagy, in which the mother eats her newborn baby’s placenta (as was the case until recently among the Fore), became popular in the United States with the spread of the home birth movement in the 1970s.

Evidence of our distant cannibal past is suggested in recent genetic studies of kuru. Heterozygosity at “PRNP” codon 129 is a major determinant of the human prion diseases. Most elderly Fore survivors of exposure to mortuary feasts in which they had consumed deceased kin are heterozygous [13]. A strong balancing selection appears to have taken place at the human prion gene in the context of the kuru epidemic. Remarkably, global patterns of diversity in the same gene indicate that historical balancing selection at this locus occurred during the evolution of modern humans. It has thus been suggested that European populations with similar genetic profiles have a survival advantage resulting from repeated episodes of endocannibalism-related prion disease epidemics in ancient human populations which made heterozygosity at “PRNP” a significant selective advantage [41]. Studies of prion genotypes from Latin America have come to a similar conclusion about the high frequency of the V129 allele in Latin American populations relative to the East Asian populations from which it arose, also suggesting selection at the prion locus mediated by cannibalism-induced kuru-like illnesses [32].

The use of genetics to probe questions of human history and evolution allows us to revisit the practice of cannibalism in a global context. It is now proposed that “the remarkable number of coding polymorphisms in human populations and ‘PRNP’ gene genealogy is consistent with the action of evolutionary processes

in human history similar to those documented in the Fore” [41]. The archaeologist Tim White’s suggestion that we had all once been cannibals now seems less provocative than it did in 2001 [49]. Although the topic of cannibalism still elicits a compulsion by some to joke about what is viewed as transgressive behavior, and has also nourished incorrect and salacious newspaper accounts of Fore behavior [37], we are now better armed to respond to the call [10] for philosophical housecleaning around the complexities of getting to know cannibals.

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