INDOCTRINABILITY,
IDEOLOGY, AND WARFARE

Evolutionary Perspectives

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The natural history of orthodontics was understood to be
through a process of gradual refinement and adaptation of
orthodontic techniques over time. Originally, orthodontic
treatment was focused on correcting malocclusions for
functional and aesthetic reasons. However, with the advent
of modern orthodontic technology, the focus expanded to
include the treatment of patients with complex dental
and facial irregularities.

The evolution of orthodontic treatment has been
characterized by a series of milestones, each
marking significant advancements in the field.

**Chapter Seven**

**DEFINITE COLONIAL EVOLUTION OF SOCIALITY AND THE INDIVIDUALITY OF KHANS**

By Polly Weiser
and standardizing a relatively large pool of these family units, thereby opening new social and economic opportunities.

This is not to say that indoctrination was or is not also used to close boundaries and bind competing social groups. Once in existence, its use for the latter purpose could have led to the strengthening of a tendency that came into being via individual selection by selection at the group level.

**Socially Defined Kinship**

Socially defined kinship, sometimes called "fictive kinship," is the extension of kinship terms and relationships of mutual support to affinal relatives, distant kin, or even nonkin through cultural classification. All human societies have systems to classify kin by social means, and the number of elementary systems of kinship classification systems is finite (Lévi-Strauss 1969).

The evolution of socially defined kinship, a topic often neglected in evolutionary biology, is a critical adaptation of *Homo sapiens*. It permitted the construction of broad social security networks for risk reduction by granting access to human and natural resources lying outside the group. Losses due to fluctuations in natural resources, inability to find mates, conflict, and so on, could then be absorbed by a broader population. There is little doubt that it was the construction of such networks that has allowed humans to inhabit so many harsh niches (Cashdan 1985; Wiessner 1977, 1981; 1982; 1986; Yengoyan 1976; Myers 1986; Smith 1988; Testart 1982).

Cognitive and behavioral prerequisites for establishing socially defined kinship include abilities to: (1) categorize and symbolize; (2) engage in relationships of reciprocal altruism; and (3) treat less familiar individuals as if they were family members, even though their habits, behavior or ideas may seem foreign or even repellent. The last point is a source of tension in human societies, for people often are not inclined to treat those defined as kin in the same way as they treat close family members or group members with whom they have grown up. Consequently, most societies have a variety of cultural mechanisms to mediate, for example, the many prescriptions and proscriptions attached to the mother-in-law relationship. The creation and functioning of social kinship systems is thus facilitated by the homogenization of behavior and values and by the establishment of culturally accepted means by which positive identity can be transmitted. It is in response to these needs that I propose that indoctrination/indoctrinability evolved hand in hand with socially defined kinship.

In this chapter I briefly review some archaeological studies of the Middle and Upper Paleolithic to argue that the evidence is compatible with the above hypothesis. Then, ethnographic examples from two very different societies will be used to illustrate the point that the opening of networks based on socially defined kinship generally requires more support from indoctrination than does closure. That is, due to a long evolutionary history of kin selection, in-group behaviors are instilled quite naturally, while those which open boundaries in the process of extending kinship must be constantly reinforced through indoctrination. The ethnographic examples used will be taken from !Kung San (Ju/'hoansi) of southern Africa, the legendary example of low-density, peaceful, flexible hunter-gatherers, and the Enga of the New Guinea Highlands, a high-density agricultural population of renowned warriors with clearly defined group identities and social structure.

**Archaeological evidence for the evolution of social kinship networks**

Systems of socially defined kinship cannot, of course, be detected directly in the archaeological record. However, indirect evidence for their evolution and that of supporting indoctrination can be obtained from several types of material remains. The first is the presence of artifacts with certain forms or decorations indicating that their makers had the capacity to symbolize. Certainly, the ability to define members of other groups as kin and maintain relationships of reciprocity over distance would be difficult without such capacity. The second is the appearance of body orna-

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1. I shall avoid the term "fictive kinship" because it conveys a false impression. Most socially defined kin are affinal relatives or distant consanguineous relatives.

2. Salt in, this volume, makes essentially the same point by arguing that much indoctrination is directed at inculcating beliefs and behavior for which subjects show low indoctrinability.

3. The material presented here is based on two years of fieldwork among the !Kung between 1973 and 1975 and a ten-year project on oral history among the Enga.
The evolution of catches and catchable projects standards is a more elusive topic of public discussion. Although the upper reaches of the Fly River have been a popular destination for many years, the range of catches and catchable projects standards has been limited. This is partly due to the perceived value of fly fishing as a sport and the desire to protect the local environment. However, as the popularity of fly fishing increases, there is a growing interest in developing new catch and catchable standards to cater to different skill levels and preferences.

In recent years, there has been a push for the development of new catch and catchable standards for the Fly River. This has led to a number of initiatives aimed at improving the quality of catches and catchable projects. These initiatives include the establishment of new catch and catchable standards, the development of new fishing methods, and the implementation of new regulations to protect the local environment.

Despite these efforts, there are still concerns about the potential impact of these changes on the local ecosystem. There is a need for a more comprehensive approach to catch and catchable management that takes into account the needs of both anglers and the local environment. This will require collaboration between the fishing community, environmentalists, and government agencies to ensure that the needs of all stakeholders are met.

Overall, the evolution of catch and catchable projects standards is an ongoing process that requires careful consideration and a commitment to sustainable practices. By working together, we can develop new catch and catchable standards that are both enjoyable for anglers and beneficial for the local environment.
1983) in the face of increasing population density. This may indeed have been the case. However, studies by Conkey (1980)—showing that the impressive painted cave site of Altamira had the greatest diversity of styles of engraved antler rods when compared to other sites—indicate that it was an aggregation site for many different social groups and thus perhaps associated with the opening of social networks. Furthermore, the recent discovery of the magnificent cave art at Chauvet in Ardeche pushes the date for such works back to the Early Upper Paleolithic (ca. 27–30,000 BP), a time when networks of socially defined kinship appear to have been forming and before there is any stylistic evidence for the closure of social networks.

In summary, the amount of material on the above-mentioned topics is vast, and interpretations are controversial due to the difficulty of extracting information on social relations from material remains. However, the foregoing brief review of archaeological evidence is compatible with the hypothesis that the first evidence for indoctrination appears hand in hand with the formation of social networks outside the group and that these networks granted access to the resources and assistance of other groups. This innovation, together with accompanying economic and technological ones, allowed modern humans to sustain relatively high population densities in Europe during the height of the last glaciation compared to those preceding it. Indoctrination at this time would have served to counteract the narrow in-group orientation of family-based units by standardizing and opening relationships of mutual support within a broader population. Let us now turn to ethnographic examples to illustrate the latter point.

The !Kung San (Jul'hoan)

The !Kung San, who inhabit northwestern Botswana and northeastern Namibia, are among the best-studied hunter-gatherer populations (Marshall 1976; Lee 1979, 1984; Lee and DeVore 1976; Biesele 1993; Wilmsen 1989; among many others). In the 1950s to 1970s, when the most extensive research took place, their subsistence largely came from hunting and gathering resources from the natural environment, from neighboring agropastoralists, and from border police and administrators in Bushmanland of Namibia.

Their camps of 25 to 40 were composed of one or more cores of siblings, who maintained strong land rights to a certain water hole and surrounding land (nilore), and attached affinal or consanguineous kin. Relations were strongly egalitarian, and leadership, based largely on respect and persuasion, was weakly defined. Few problems were solved by the group as a whole: the most common response to food shortage or conflict was for group members to “vote with their feet”—to disperse and live with relatives in other areas until the problem subsided.

The social resources of !Kung camps and the natural resources of their nilore met the needs of the average year, but were insufficient to sustain a band through longer term environmental fluctuations and social problems. Thus each !Kung man and woman constructed his or her own network of social kinship ties underwritten by a formal exchange relationship called hxaro that permitted partners mutual access to the resources and assistance of their exchange partners whenever need arose.

A study of the hxaro networks of 81 !Kung men, women, and children (Wiessner 1977; 1981; 1982; 1986) revealed that adults had an average of 16.5 hxaro partnerships with individuals who were well distributed across the sexes, across different age categories and ways of making a living, as well as being spread geographically. The geographical spread of partners extended from camps within a 5 km radius to those up to 200 km away. When food shortage, conflict, or other problems arose, individuals or families traveled to the camp of a partner and remained for days, weeks, or months, hunting and gathering on their partner’s land until trouble subsided. The average !Kung spent 2.2 months a year “visiting” hxaro partners and enjoying the benefits of their kin and country.

Hxaro relationships were constructed along the lines of both biological kinship and socially defined kinship. Lee (1986), in an extremely perceptive analysis of !Kung kinship, identified three principles for designating kin:

Kinship I. This is the standard kinship system that assigns kin terms to those related to ego, distinguishing nuclear family from collaterals and, in most cases, collaterals from affinal kin. Standard !Kung kinship terms are structured by relative age and generation, and each term carries with it a relationship of joking or

5. At the moment, there is some debate over these dates.

6. Only spousal siblings and siblings’ spouses are given terms that do not distinguish them from collateral kin.
grating individuals into the broader population, providing openings rather than closures. And the !Kung system is far from unique in foraging societies; similarly far-flung social security networks (Cashdan 1985; Damas 1972; Myers 1986; 1993; Spencer 1959; Yengeyan 1976) and supporting rituals involving indoctrination (Tumbl 1982; Myers 1993; Hayden 1987) are common in foraging societies throughout the world.

The Enga

The Enga inhabit the Highlands of Papua New Guinea at altitudes between 1,500 and 2,500 m and densities up to 150 to 200 people per sq. km. They have been the subject of a number of major ethnographic works (Meggitt 1958; 1964; 1974; 1977; Feil 1984; Wohlt 1973; Lacey 1986; Talyaga 1982; Waddell 1972; among many others). Their staple crop, the sweet potato, is cultivated in an intensive system of mulch mounding to feed large human and pig populations. Throughout Enga great value is placed on pigs, the major social and political currency. Politics, which center around land and exchange, occupies much of men’s time and effort, while women devote themselves primarily to family, gardening, and pig raising. While frequent and destructive warfare creates sharp divisions between clans (Meggitt 1977), ceremonial exchanges of pork, live pigs, shells, salt, oil, foodstuffs, and other goods forge alliances and are used to reestablish peace, among other things. As members of a society in which egalitarianism embodies the ideal, all men can potentially make names for themselves and become big-men (kamongo) through displaying skill in mediation, organization, public oratory, and the manipulation of wealth. However, competition in this arena is fierce, and should they fail, their demise is rapid.

Two axes of kinship based on agnostic and affinal relationships embed each person in a supportive network. Clan membership, based primarily on descent from a common ancestor, defines social and spatial boundaries, furnishing a pool of people who cooperate in such activities as agricultural enterprises, defense of land, procurement of spouses, and the performance of ancestral cults. It assures security from the net bag in which babies are carried to the grave, so to speak—whether individuals’ actions are right or wrong, they are supported and defended. The affinal axis of kinship, that established by marriage, has to be created and

maintained. It opens boundaries and is virtually the only path to resources or assistance from outside the clan. Efforts to build and maintain networks based on affinal/maternal kinship depend on family enterprise as well as social and economic competence. While all clan members can reap similar benefits from within the group, ability to successfully manipulate maternal and affinal relationships is the key to furthering the social, economic, and political standing of the family. Clan membership, with its accompanying strong loyalties, thus constitutes a centrifugal force toward closed groups, and affinal/maternal kinship a centrifugal one, forging strong ties and loyalties outside the clan.

Land, the basis for sustenance, is prized and defended as the source of wealth, pride, and independence. It is defended through means of social boundary maintenance (Peterson 1973)—displaying resources to those related through marriage and giving them access to those resources—and through the physical means of warfare. Warfare took the lives of about 25 percent of men between 1900 and 1955 (Meggitt 1977).

The situation in Enga at the time of first contact in the 1930s did not represent a long-established situation, either ecologically or socially. Substantial changes occurred throughout the New Guinea Highlands beginning some 250 to 400 years ago when the sweet potato was introduced, releasing many constraints on production and making possible for the first time regular surplus agricultural production in the form of pigs. A rich and factual oral history records the changes that took place after the introduction of the sweet potato (Wiessner and Tumut 1996). The most significant of these changes were:

1. Population growth in Enga from some 10–20,000 persons (estimated from genealogy) about 240 years ago to 150,000 in 1980, which represents about 1.1 percent per annum growth.
2. Substantial population shifts and reorganization to take advantage of new opportunities provided by the sweet potato.
3. A gradual change from a prestige economy based on the trade of nonagricultural trade goods (salt, axes, cosmetic oil, shells, plumage, etc.) to one based on agricultural production in the form of pig exchange.
4. The formation of very large networks of ceremonial exchange in response to problems and opportunities that arose after the introduction of the sweet potato. The most significant problems mentioned in Enga oral history include struggles over control
The recent addition was a public education center. The goal of the center's expansion was to provide educational opportunities for students and the community. The center featured a wide range of educational programs, including workshops, lectures, and interactive exhibits. It aimed to foster a love of learning and encourage lifelong education.

The center's expansion included the construction of a new building, which was designed to be accessible and welcoming to all. The building housed state-of-the-art facilities, including a library, classrooms, and a multimedia center. The library was equipped with a variety of resources, including books, journals, and electronic databases.

The center's expansion also included an expansion of its outreach programs. These programs reached out to local schools and community organizations to provide educational resources and support. The center worked with schools to develop curricula that aligned with state standards and helped students prepare for college.

The center's expansion was funded through a combination of government grants, private donations, and community contributions. The center was committed to ensuring that everyone had access to the benefits of education, regardless of their background or circumstances.

The center's expansion was a testament to the power of education and the importance of investing in the future. It provided a space where individuals could come together to learn, grow, and make meaningful contributions to their community.
forward the qualities of a past leader who was transformed through the Sangai rites:

Ameane's physical and mental capabilities were always there,  
His influence and renown were always there,  
People keep saying the long horizontally laid (garden) fencing is  
Ameane's,  
People keep saying the long picket (garden) fencing is also Ameane's,  
The long-leaved pandanus palm is also Ameane's,  
The sweet potato garden ready to harvest is also Ameane's,  
What makes Ameane as popular as he is?  
That huge, untamed and slitt-earfed pig is also Ameane's,  
He keeps saying that he has been alone at a funeral feast;  
He keeps saying that he has been a major force in organizing the distribution of live pigs and butchered pork [in fee exchange].

Note that fighting prowess and warfare do not enter into the ideal image.

Nights were spent by lapsing into short periods of sleep followed by discussion and dream interpretation. Most dreams were read as having implications for warfare or ceremonial exchange, and so young men were taught to reflect on broader politics. Verbal skills were trained by turning these dreams into metaphor and song. The young men, who emerged to parade majestically on the ceremonial grounds, to present predictions made from dreams through song, and to be courted by young women, were not warriors, but those indoctrinated to produce, orate, and succeed in exchange that opened a wide network of social kinship and with it access to the wealth and resources of others. This is not to say, however, that the bachelors' cults had nothing to do with group solidarity, for certainly those who went through the cults together felt strong loyalties for life. However, this result was the product of joint action and experience, not active indoctrination.

In short, few if any formal rites of Enga education teach young men group loyalty—such loyalty develops quite naturally in the process of maturation. Boys grow up in the men's house hearing clan history and stories of battle by night. From a very young age they attend events of ceremonial exchange in which the clan as a whole participates. By the time they come of fighting age, most are more eager to try their hands in battle, often as allies for other clans, than to knuckle down to the drudgery of agricultural production and the intellectually taxing education for oratorical and political skills. Formal education/indoctrination was thus aimed at restraining young men from violence, giving them a broader view, and instilling as the highest values production, intellectual acumen, and social skills. These would allow them to expand their networks of social kinship outside the clan and thereby acquire wealth for themselves and their clan. Those who wished to enhance their fighting skills had to do so through the private purchase of magic formulae, and when it was necessary to rally the clan for war, spirits were raised through songs that insulted or dehumanized the enemy and through rituals of unity held immediately prior to or during battle.

Conclusion

Despite very different programs and contexts of indoctrination among the !Kung San and Enga, the primary thrust of more formal indoctrination for both was to counteract in-group tendencies by standardizing and opening boundaries. Parochial loyalties that formed quite naturally during childhood through familiarity, sharing, and mutual support within the local group were thereby overridden, and the way was opened for the formation of broad networks of social kinship outside the group.

In closing, it should be noted that though the predisposition for indoctrinability appears to have a biological basis, its content is culturally stipulated. Once in existence, socially defined kinship and supportive indoctrination can be molded to suit the contexts and needs of each society, whether this be to open or close boundaries, or to form larger units of competition. The examples given here are of the former, but certainly other ethnographic examples illustrate the latter. It is precisely this flexibility that made socially defined kinship and supporting indoctrination such important factors in human evolution.

References


The academic year at the University of Cambridge began in October 1996. The first term was marked by a series of lectures and seminars. Students were introduced to the core subjects of mathematics, physics, and philosophy. The university's library was expanded to accommodate the growing number of students.

In November 1996, a new student center was opened, providing additional study spaces and a café. The university also launched a new online course registration system, allowing students to enroll in courses without having to physically visit the registrar's office.

The academic year concluded in July 1997, with a series of graduation ceremonies. Students were presented with certificates and degrees for their academic achievements. The university celebrated its bicentenary in 1997, with a series of events and lectures highlighting its rich history and contributions to the world of learning.
The Politics of Peace in Primitive Societies

The Adaptive Rationale Behind Corroboree and Calumet

Johan M. G. van der Dennen

Peace: a period of cheating between two periods of fighting

Antimose Bierce, Devil's Dictionary

Introduction

Peaceable preindustrial (preliterate, primitive, etc.) societies constitute a nuisance to most theories of warfare, and they are, with few exceptions, either "explained away," denied, or negated. Contending theories have also tended to severely underestimate the costs of war to the individuals as well as to the communities involved.

Materialist theory, as formulated by Ferguson, is one such exception: "[I]n contrast to the Hobbesian view, we should find nonwar, the absence of active fighting, in the absence of challenges to material well-being" (Ferguson 1984). Where the costs of initiating violence outweigh the benefits, war is expected to be absent (Durham 1976; Ferguson 1984; 1990; 1994). There is no theoretical reason to deny the possibility of peaceful societies. Indeed, "there may be alternative peaceable and militaristic trajectories of evolution" (Ferguson 1994).