

Tuesday 25th June 2013
Lecture Theatre A

Being Mobile?

Chair: Thomas Widlok

Session abstract

Being mobile and being a hunter-gatherer does not necessarily coincide. Not all mobile people are foragers and not all foragers are mobile, in fact in the current situation only very few are. Moreover, in the long term and on a large scale, hunter-gatherers may be said to be less mobile than their expanding agriculturalist neighbours. It is therefore productive to ask what difference mobility makes in the hunter-gatherer context and whether foraging generates specific forms of mobility. What is the relation between mobility on the one hand and features such as equality, property, individual autonomy, flexible social relations, and forager knowledge systems on the other hand?

This panel invites studies that deal with forager mobility and processes of sedentarization in a broad sense, revisiting classic questions and models of mobility, documenting past and present case studies, or connecting forager data with new theories about mobility.

Maritime vs Continental hunter-gatherers in the Mesolithic of Brittany: a question of mobility

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The past ten years of archaeological research in western France and in numerous areas of Atlantic Europe have enabled us to distinguish between two different prehistoric lifestyles that relied on hunting, fishing and gathering at the beginning of the Holocene: the first along the

coastline, and the other inland. This differentiation was made possible thanks to the analysis of the human diet (by the quantification of faunal remains and isotopic analyses of human bones), but also thanks to the study of the lithic raw-material distribution. Numerous excavations helped to establish functional classifications between residences and different kinds of locations, and to understand the dichotomy between inland and coastal sites a little better. However, this dual scenario needs to be adjusted according to the cultural considerations within the material culture. Studies show that each cultural territory was widely opened to exchanges. This opposition between inland and coastal sites could be therefore be explained by the very specific nature of the coastal resources, but we still need to distinguish each economy beyond the very numerous taphonomical filters.

Recent fieldworks on the Beg-er-Vil and Beg-an-Dorchenn shell levels in Brittany have enabled us to approach the interactions between people and the coastal ecosystems since the 8200 cal BP climate event to the neolithisation at the end of the 8th millennium cal BP with greater precision. The recent advances of sclerochronology on shellfish provide further information on the mobility of these maritime hunters-gatherers who travelled regularly from the continental coastline to the nearby islands. This research provide greater insight into the various Mesolithic and environmental tempos, before the rising sea levels disrupted these economic systems.

Micro and macromobility in the transition from hunter-gatherer to agro-pastoralist societies in the southern Argentinean Puna

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The archaeological data recovered in Antofagasta de la Sierra (Southern Argentinean Puna) on the hunter-gatherer to agro-pastoral societies transition shows from 5500 years BP a progressively reduced mobility that was leading to a very scheduled micromobility, with a return to known places. It highlights the fact that the increasing degree of binding of sites at microscale not led to regional circulation stops working.

Indeed, by the end of the Middle Holocene macromobility presents fully function, based on access to exchange networks and kinship networks that make possible the procurement of biotic and abiotic resources and technical and technological information from large distances, involving completely different environments of Northwest Argentina.

This paper discusses aspects of the proposed model from different lines of evidence (plant and animal biotic resources, mineral resources, ceramic materials and lithics artifacts designs, etc.) through the information of four residential bases. Of particular relevance to this work is the provenience obsidian analysis, which allows support the occurrence of mentioned macromobility linked to the use of different obsidian sources located in the Puna Argentina, far between 50 and 200 km.

Modeling forager mobility: Use of agent-based modeling for studying the interaction of environmental, social, and cultural factors

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With no doubt, mobility among hunter-gatherer societies as well as individuals varies considerably. There are often, on the other hand, similar mobility patterns observable. This raises the question if it is possible to develop a general model of hunter-gatherer mobility which accommodates for this variety and similarity. This question was answered previously mainly with models from behavioral ecology. The role of social and cultural factors remained underrated or subordinated because of a number of reasons. One reason is the preference of rather simple models. The recognition of the plurality of mobility reasons, however, leads quickly to complex hypothetical models.

Agent-based modeling (ABM) is an interesting instrument to analyze such hypothetical models. Here it is possible to work with multi-factorial conditions to study the emergence of behavioral factors. With the development and application of a simulation model, new insights can be gained into how the diverse dimensions of hunter-gatherer life are affecting the mobility. In this paper, a special focus was set on the range of interactions of resource-oriented, social and cultural motivations which lead to considerably different patterns than with one-dimensional approaches expectable.

Mobility and recognition of space: The Bateq and their use of river systems

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The Bateq, numbering about 960 people, are one of the aboriginal peoples of Peninsular Malaysia ("Orang Asli" in Malay). They inhabit in Pahang State, Kelantan state, and Terengganu state. The Bateq in Kuala Koh, Kelantan maintain their traditional way of life as hunter-gatherers, and in spite of being forced to stay in a reservation by the government, still lead their mobile life in some way.

When foraging in the jungle, they use river systems for navigation. This navigation system is usable in the jungle where plants grow so thick and fast that people cannot find land mark nor use the sun for direction. They know positional relation of rivers and streams, and orient themselves on river systems. They also use rivers directly with raft, move camps along it, and make camps near it. A river is like a road for them, names of rivers are shared by the members of the community.

This recognition of space is different from agriculturalist recognition of it: land ownership. Land ownership is based on the concept of area, an extent of a ground enclosed within a boundary, but how the Bateq recognize space is extending along a river, they make lax territory along with river systems. Even the sedentarized Bateq maintain the recognition, they move along a road like a river.

Settlement shifts and past memory

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Shifting of settlements is a normal state of life among central African hunter-gatherers, at least for a part of the year. A group of Mbuti hunter-gatherers in the Ituri Forest shifted their camps 5 times during three

months and a half, while the Baka in Cameroon stayed at 15 camps during a three month *molongo* hunting expedition. In addition to these short-term and seasonal movements, the Mbuti moved more than 100 km over a period of 40-50 years. I will first suggest that such short- and longer-term movements are based on the ecological conditions, in particular, the availability of food and other resources. There are, however, other meanings for the settlement shifts: they often attach a historical meaning to changing campsites.

They put to each campsite a specific name, which often derives a large tree standing nearby, a stream from which they fetch water, or the name of a certain person, and remember well the locations of these old campsites. I recorded more than 30 such old campsites and their names in a group of Mbuti people. With these camp names, they clearly remember the past events: who were born, died, got sick at these camps, for example. Old campsites are in this way used as reference points for reconstructing their history. Without such references, they may find difficulty in keeping memories of their life history and past events. With the shifts of campsites, they articulate their past experiences, which might otherwise have been obscured in the monotonous time flown seamlessly.

I will discuss the implications of this for understanding their relationships with the land.

Is there a real transformation of mobility in the Baka hunter-gatherers community in Gabon?

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This presentation focuses on the Minvoul region in the north of Gabon, where the Baka form a minority group composed of less than 500 individuals. The Baka settled in the surroundings of the town of Minvoul, in a total of eight villages. Although the majority of these individuals, up to 40 years old, mainly live in the deep forest, the youngest people considered the village as an anchor point (cf. Joiris, Paulin). First of all, the question of mobility will be discussed (i.a. Leclerc). Bahuchet (1991) prefers the term of mobility over terms referring to nomadism. Anyhow, anthropological and linguistics arguments will be used to define the mobile community. A variety of (endogenous and exogenous) criteria will

be taken in account, such as governmental pressure, limited territory, contact with the neighbouring population, camp building (the know-how to build a vegetal hut with Maranthaceae leaves is still shared by the inhabitants), several terms referring to 'walking' (about 19) and forest camps (1 generic and 11 specific), few goods (vs Adzap village in different area), etc. These features will be shown to have different degrees of importance.

Moreover, as the forest extends over three countries, Cameroon, Gabon and Congo, the genealogical records show that the reference to a particular country is not necessarily relevant. In fact, distance is a much more central notion than country. In the Minvoul region, the forest is still a landmark carrying symbolic values. It is the main site for reinforcing family and social cohesion. However, can we still find Baka individuals in Gabon who predominantly live in forest camps?

The Baka: Transition of mobility patterns and social organisation in Gabon

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Changing resources, the death of relatives, working in a goldmine, or marital violence are only some of the factors causing or preventing movement amongst the Baka population, a group living in the tropical forests of North-Eastern Gabon in Central Africa.

This paper considers what constitutes mobility for the Baka of today, and describes motivational patterns behind their movement. Adding to previous interpretations of Baka mobility focused on environmental determinism, the role of kinship structures in human movement and the individual determination of a life course are documented.

Based on case studies and Baka life histories, the concept of *motility*, meaning the potential or capacity to move, is proposed as a novel way to approaching forest forager mobility. It is argued that motility avoids the socio-ecological or socio-economic dichotomy which has governed hunter-gatherer studies, and focuses on the possibilities and constraints of group or individual mobility within the environmental and structural context.

Finally, it is questioned whether motility can sufficiently account for the social change evident in Baka sociality today.

Key words: Baka, Gabon, Mobility, Motility, Social Change

Mobile practices that continue transforming: A case study of the Mlabri in northern Thailand

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The purpose of this paper is to examine how the Mlabri's mobile practices that connected with subsistence economy have transformed through the involuntary sedentarization by national policy and the change of economic relationship with neighboring farmers. Northern Thailand is the place where a lot of the "Chao Khao" (meaning highlanders or mountain people) lives. Most of them have traditionally inhabited in mountainous terrain as farmers, practicing swidden agriculture, but the "Mlabri", also known as the "Spirits of Yellow Leaves", has been practicing hunting and gathering and they also lived in forest with frequently mobile practices for many years. However, as the situation of neighboring farmers changed, the economic relationship between the Mlabri and neighboring farmers was changed and the mobile practices were restricted physically. Especially it has been occurred since the Mlabri was settled by national policy in the last 1990s.

Although the mobile practices were surely restricted, it seems to be still practiced, and it is also relevant to their features, such as individual autonomy and flexible social relations. However the form of the mobile practices is not the same as before, it has been transformed to adjust the surrounding situation. This paper reveals the process of transformation of the Mlabri's mobile practices, and explains the current its form. It also points out that the mobile practices are impulsive or strategic practices on the one hand, but on the other hand it may be the cause of vulnerability in sedentary life.

Straddling bush and resettlement site: Contemporary dynamics of residential moves among the Central Kalahari San

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This presentation will examine contemporary dynamics of residential moves among the Central Kalahari San and process of their effort to construct a new social space after a relocation program. In 1997 about 3000 Central Kalahari San was relocated from a game reserve to government-planned resettlement sites outside the reserve. Since then, they have been living in a new and unfamiliar territory and engage in a lifestyle which is completely different from the one at their original home. In the resettlement sites, each household was allocated a fixed residential plot, and not allowed to move anywhere as they used to do.

Since 2000, however, some of the residents had created informal mobile dwellings in the surrounding bush land, where they can engage primarily in hunting and gathering and live in small residential groups. Between the resettlement site and the bush dwellings, there still exist a flow of people back-and-forth. Furthermore, after they won legal right to return to their lands in the game reserve in 2006, there are a frequent movement, as well as exchange and mutual support, among those who live in the game reserve, those that occupy the resettlement and those who live in the bush dwellings. Such movements have enabled them to utilize both the welfare benefits within the resettlement site and natural resources from the bush, and to relieve discord and social tension among them.

In this presentation, using the data of their residential moves, which is obtained by continuous field research from 2000 to 2012, it will be discussed that processes of sedentarization and new dimension of mobility among the Central Kalahari San.

Tuesday 25 June 2013

Lecture Theatre B

Is there a forager mode of sociality?

Chair: Penny Spikins

Session abstract

Our traditional ways of understanding how hunter-gatherer social relationships are constructed are often based on economic ideas – such as immediate or delayed return systems, or the nature of foraging practice or how food or goods are shared. This session will examine the possibilities for differentiating societies on other, more socially relevant, grounds and debate how these other distinctions relate to the economic realm. Different types of leadership or authority, intergroup and intragroup expressions of conflict, violence or resolution, differing types of emotional construction, understandings of self and others or the nature of 'status' in material or moral terms are some of the distinctions which we aim to explore to better understand how the 'social' is can be constructed differently in hunting and gathering groups.

Sociality and livelihood among Punan of Borneo

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Rainforest hunter-gatherers are often characterized with particular reference to subsistence practices and environmental knowledge, rather than social practices and political realities. In this essay, which mainly deals with the Punan Malinau of Borneo, it is argued that the distinctive characteristics are to be found, not primarily in mode of subsistence, but in mode of sociality and mode of thought. Core features of this mode of sociality include individualism, family autonomy, opportunism, sharing,

lack of long-term binding commitments, and an inclination for social equality.

The concept of sociality refers to the logic by which people relate to each other, as well as the many ways in which they cope with challenges and utilize opportunities of the changing social and political realities in the world around them. The Punan Malinau must be understood both in relation to their interaction with a range of dominant neighbors and to the historical context within which these relations have been formed and transformed. The flexible utilization of a social environment is often just as important for our understanding of their distinctiveness, as is the way in which they adapt to and utilize the rainforest. It is suggested that the concept of sociality may also encourage us to compare not only different groups of hunter-gatherers, but also other groups sharing a similar ethos and social practice, e.g., low-status, 'peripatetic' minority groups engaged primarily in various forms of social foraging.

Aggregation and cooperation as socioeconomic strategies developed by hunter-gatherers in the Beagle Channel

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Every society develops the mechanisms to improve solutions when facing to multiple social and environmental situations. In this sense, hunter-gatherer groups are not an exception: social conflicts, scarcity of resources or environmental fluctuations have been confronted by different innovative strategies. We think that cooperation is a social mechanism that could emerge as an extremely valid socioeconomic strategy in order to assure the survival of the social network. In fact, at present there are many cases worldwide where cooperation becomes an efficient way to solve problems.

In this paper we focus on hunter-gatherer-fisher societies that inhabited the southernmost region of America till the 30's of the last century. This

part of the world presents some exceptional characteristics such as extreme latitude and a very hard climate. Within this context, cooperation processes produced through aggregation events would have allowed managing resource variability, not only in risky situations due to scarcity, but also when an extraordinary amount of resources would have taken place, such as the stranding of a whale.

In order to advance in the study of how cooperation would be promoted and sustained within these societies, we show our current research developed using Social Simulation.

Open-aggregated organization and associated patterns of sociality

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This paper explores hunter-gatherer sociality through the concept of "open-aggregation" which designates a condition of flexible association and dissociation of individuals with social units, and flexible initiation and termination of interpersonal relations within and beyond them. The concept was developed in the book *Anarchic Solidarity: Autonomy, Egalitarianism and Fellowship in Southeast Asia* (Gibson and Sillander, Yale 2011) which describes a group of Southeast Asian hunter-gatherers and shifting cultivators which share such a condition and an associated propensity for extensive personal autonomy, egalitarianism and social solidarity.

On the basis of this book and the literature of hunter-gatherers the paper seeks the sources of this assemblage of traits and hunter-gatherer sociality beyond the mode of subsistence in the demographic conditions, organizational dynamics and cultural principles which hunter-gatherers hold in common with other loosely organized societies. It highlights the dialectical interplay between elementary socio-demographic conditions such as residential mobility, dispersal, and low population density, and various distinctive cultural attributes such as "immediacy" (Ingold, Bird-David), "demand sharing" (Peterson), "social grace" (Rosaldo), and "convivial sociality" (Overing and Passes).

Rethinking egalitarianism

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The characteristics of hunter-gatherer societies have been discussed in the framework of social structure, or in relation to various “-isms.” Egalitarianism is one representative of such “-isms.” This presentation aims to have a rethink on such point of view, from the examination of their social interaction.

Let’s take the sharing as an example. Hunter-gatherers are said to distribute goods such as meat, to the group members relatively equally. Such concept of “equality” implies a limited set of persons, and an observer’s eye (like that of God) over it. Each part of goods is distributed equally to every person. However, from the observation of hunter-gatherers’ daily social interaction, we can’t confirm such fixed circle of distribution, nor “God’s eye.” They rather share goods to the have-not persons next to them.

Repetition of such sharing results in the so-called equal distribution. This process is similar to the phenomenon that can be described by the “diffusion equation.” If so, are hunter-gatherers the people who don’t have the ability to look over the entirety? It is not true. They rather discard the observer’s eye which looks over the whole, and actively confine the outlook to “here and now.” This characteristic of hunter-gatherer social interaction should be discussed in relation to the natural and social environment in which they have evolved.

Caring in inter-ethnic relationships: Physical disabilities among the Baka people of south- eastern Cameroon

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Work in hunter-gatherer societies is often defined by tasks that can be performed by a single individual. However, some individuals within these

societies, including elders or people with disabilities (PWDs) receive help when performing tasks. Within “egalitarian societies” the issue of “food sharing” remains important. Although some approaches to understanding these societies have changed in response to changing conditions, this study focused on one group that has been disregarded: PWDs in hunter-gatherer societies.

It is essential that PWDs obtain multiple forms of assistance from community members to perform activities of daily living. Thus, these individuals become more “social” because they engage in more intimate and meaningful relationships with their neighbours than do able-bodied individuals. However, the traditional structure and social composition of a society significantly influences these relationships. In my study, I found that Baka hunter-gatherers (“Pygmies”) and Bantu-speaking farmers (“villagers”) engaged in complex inter-ethnic relationships. By tracing the life courses of individuals with disabilities and treating them as social entities, this paper clarifies several aspects of the social structure of modern hunter-gatherer societies.

The economic inter-ethnic relationships between the Baka and Bantu people at the study site play an important role in the livelihoods of PWDs. This phenomenon is thought to have emerged after the 1950s when “sedentarisation” and “cultivation” were encouraged among these groups. At the same time, the initiation of cacao cultivation created a cash economy and a sexual division of agricultural labour, and it became possible to be paid in exchange for care services rendered in the local community. The “spread of charity and rehabilitation for PWDs” in the 1970s and the increased availability of “services for marginalised people” after the 1990s made it impossible to view PWDs only within the context of their local communities. PWDs live within particular role expectations that are influenced by historical factors. I re-examine local history and life changes in an agricultural hunter-gatherer society by examining the life course of the Baka and their neighbours with disabilities.

Unaccountability and social relations among Evenki hunters of East Siberia

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Evenki of East Siberia are well known for their being not credible, irresponsible and rarely keeping their promises. I myself experienced

quite a number of situations in which these stereotypes were supported, when Evenki, even my closest friends, did not come in time as was earlier promised or sabotaged previously confirmed plans.

In this paper I plan to discuss to what extent this type of unaccountable behavior is a reaction to their low status in the region or is a part of their sociality. As hunters Evenki need in their everyday life a mode of behavior unpredictable to others, which help them to hunt and spontaneously react to the situations of emergency. I suppose that they managed to use this culturally supported skill in their interactions with broader world, including hierarchical neighbors, in which they mostly act as a subordinated party.

In the presentation I plan to describe how Evenki way of unaccountability is constructed and how it works in the case of reindeer counting – an annual procedure during which Russian auditors try to count the reindeer that Evenki herd for them. I also plan to discuss in which spheres Evenki value accountability; how they experience situations of counting, reporting and taking responsibilities; and how Evenki's feeling of being successful corresponds with the idea of not being transparent and predictable to other agents (persons, animals and spirits).

Social norms as regulators of reproduction

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We will present the state of the art of our research project "Ethnoarchaeological Approach to Reproduction in Hunter-Gatherer Societies", about the crucial role of social norms in controlling the reproduction in Hunter Gatherers societies. Using a specific multi-agent system (MAS) we simulate the effect of social rules relevant for reproduction behaviour.

We have selected different ethnographic cases (Yamana and Selknam of Tierra del Fuego, Northwest Queensland Aborigines in Australia, Inupiat of Alaska and Coast Salish of the American Northwest Coast). We have synthesize and formalize the social norms to feed them into the multi-agent platform developed and try to assess to what degree they do

influence the control over reproduction. These social norms are maintained daily and transmitted through stories and legends, through education in daily and special events (rituals and ceremonies).

Analogy: models and their implications

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What is analogy? Many in archaeology look not for analogy at all, but for direct correspondence. Hunter-gatherers of the past did X, because hunter-gatherers of the present do X.

True analogy is more subtle, and it is also structural. For example, one might consider the correspondence between the slow transition from Mesolithic to Neolithic ideologies (in Europe) on the one hand, and the acquisition of an Iron Age means of production while retaining a Later Stone Age mode of thought (in Africa) on the other. That analogy involves two continents as well as several aspects of production and ways of thinking about land, labour, leadership, sharing and consumption, kin and outsiders, and even the intervention of the state and resistance to it.

This paper will pose questions about relations between the African archaeological record and ethnographic analogy (from living and recent hunter-gatherers), and about models such as *regional structural comparison* and its application in time as well as space. It will touch on both Middle Stone Age and Later Stone Age cases, and the ethnographic focus will be on San populations in southern Africa.

The Soviet experience in the typology of hunter-gatherers

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The elaboration of any scientific problem has to consider the experience of previous generations of scientists. In the USSR the typology of hunter-gatherers societies was actively investigated by archaeologists as well as ethnographers. But because of the "Iron Curtain" and the language barriers the achievements of the Soviet science were unknown in the West. Therefore, the understanding of Soviet scientists' groundwork in the field of hunter-gatherers societies typology as well as the periodization of primitive society is an extremely important.

The first original ideas were proposed by archaeologists from the Soviet Union in the 1930s that was associated with the implementation of Marxism into a science. But the real breakthrough in the field of the primitive society exploration has been made in the 1960's and 80's. In particular many methodological problems of reconstruction and the study of the ancient societies social structures were achieved.

The periodization of primitive society proposed by Soviet researchers was based on changes in the social structure. Thus the typology was connected with the mode of production and the environmental conditions. By this way several economic-cultural types of hunter gatherers were identified.

The criteria of a classification have to solve the problems, since any classification is only a working tool for researcher. In contrast to the neo-positivism Marxism distinguishes the leading features, which are primary for a scientific classification, and therefore specify the others - secondary. The establishment of additional parameters in the study of hunter-gatherers can be effective only if they correlate with basic issues.

Comparing two hunter-gatherer societies (Piraha and Maniq) on theoretical grounds

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Controlled supra-regional comparisons have always been among the methodological hallmarks of hunter-gatherer studies. Many theories developed on the basis of regional studies, have been incorporated into this field of enquiry as general research strategies and theoretical concepts. Following this tradition we try to compare two hunter-gatherer societies from different regions of the world, namely the Maniq of

Thailand, studied by H. Lukas and K. Hakami and the Piraha of Brazil, studied by D. Everett.

Despite some differences both societies show striking parallels concerning their linguistic and cognitive characteristics. At the same time there are several similarities in their modes of socio-cultural activities, in terms of culture acquisition and patterns of socialization, as well as comparable forms of sharing and reciprocity. Our goal is to show how similarities in the cultural sphere can be explained by similar social and economic conditions, which both societies are subject to.

First of all we want to present results from our own field research and highlight these similarities in order to identify potential parameters of comparison. Furthermore, we try to provide explanations for these observed similarities (and differences) by building on well-established concepts of classic hunter-gatherer studies. Moreover, we try to incorporate recent approaches from Cognitive Science and Cognitive Anthropology into our theoretical considerations. In particular, we intend to point out the causal linkages between Everett's "immediacy of experience principle" and Woodburn's "immediate return principle".

Tuesday 25th June 2013

Lecture Theatre C

Violence and Non-violence in Hunter-Gatherer Societies

Chair: Kirk Endicott

Session abstract

If the behaviors that we gloss as "violence" and "aggression" are ingrained in our species, as some anthropologists and evolutionary biologists claim, then they must have been favored by natural selection. Except for the last 10,000 years or so, that selection took place in the context of small groups living by hunting and gathering. In this session scholars examine the conditions under which violence and peace occur in a sample of contemporary and recent hunting and gathering societies with the aim of shedding light on the question of whether natural selection would have favored aggression among our ancient ancestors.

**Hunter-gatherers on the best-seller list: Steven Pinker's
and the "Bellicose School's" treatment of forager
violence**

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The question of violence in hunter-gatherer society has animated philosophical debates since at least the 17th century. In Hobbes' social evolutionary view, life in the "state of nature" was "nasty, brutish, and short," while Rousseau launched humanity's trajectory from a baseline of the "noble savage." In the 20th century more ethnographically-grounded understandings of hunter-gatherer life have replaced the speculations of the savants. Nevertheless the underlying debate has remained.

Like Voltaire's Dr. Pangloss, Steven Pinker's string of best-sellers has sought to affirm that civilization, if not the best-of-all-possible-worlds, is at least vastly superior to the state of humanity during its long history of hunting and gathering. In "The Better Angels of our Nature" and elsewhere, he draws upon a

series of recent studies that assert a baseline of primordial violence by hunters and gatherers. Pinker cites these as the clincher for the Hobbesian view.

In challenging this position I draw on four decades of ethnographic and historical research on the San of Botswana and Namibia. In my research I noted the importance of situating evidence for !Kung aggression in the historical context of colonial and post-colonial southern Africa. The "bellicose school" tends to ignore or minimize this context; further they blur or erase the line between foragers and evidentially more-warlike early farmers. By (re)creating a distorted caricature of hunters they are able to assert that recent and modern warfare with all its horrors looks benign by comparison. My goal is to present a more nuanced perspective on hunter-gatherer violence and, in so doing, recalibrate the balance-sheet between "savagery" and "civilization."

"Fighting like the cornered mongoose":

The intensification of violence in Kalahari San sociality in pre-colonial and Colonial times

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The phrase in parentheses, which frames the substance and argument of this paper, refers to a recently surfaced passage from a long-buried item of German colonial literature on the !Kung San of north-eastern Namibia. Written by the farmer, traveller and hunter J. H. Wilhelm almost a century ago, its depiction of the !Kung in intensely violent and bellicose terms resonate with contemporary writings on the allegedly bred-in-the-bone disposition for war and violence of humans. This is why the passage, for all its obscurity, has found its way into the recent and current *Homo bellicus* literature. Repeatedly cited and referenced, it has become a key bit of 'empirical' evidence for both hunter-gatherers' and-by extrapolation and analogy--humankind's warring nature.

What do we make of the violence Wilhelm reported about a hunter-gatherer people that a couple of generations later were described as peaceful? I deal with this question in two ways, one ethnographic, the other ethnohistorical. In the first I examine the passage's accuracy as a piece of ethnographic reportage, which will reveal a number of shortcomings, prime of them hyperbole and projection of preconceived notions the author derived from the zeitgeist of colonial settler society. In the second I place such violence as was perpetrated by some of the San peoples of colonial Namibia (and neighbouring Botswana)

into a historical context, one of political turmoil and upheaval deriving from the presence of intrusive settlers. This politicized and even militarized some of the indigenous San population, undermining a pattern of sociality marked by egalitarianism and sharing, as well as avoidance of and vigilance against violence.

The *gob*, the media, and the noisy intruders: representations of violence in Semang-Negrito groups (Peninsular Malaysia)

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This paper aims to describe the perceptions, manifestations and representations of violence among one of the three Orang-Asli (Original People) sub-groups of Peninsular Malaysia— the Semang-Negrito—with particular reference to the Batek and Jahai ethnic groups.

Around four to five hundred Batek are still nomadic hunters and gatherers and live in the Taman Negara National Park. Other Batek groups and most of the Jahai—despite the fact that they are sedentary—still partially retain an egalitarian hunter-gatherer structure and organization, which is based on the absence of central political power and social hierarchy.

Both Batek and Jahai cultures and economies are still intricately connected to the world of the rainforest, which is perceived as a safe maternal womb, in contrast to the world outside the jungle, which is often perceived as an 'other', 'violent' world even by sedentary populations. Danger, aggression and violence are mostly associated with the *gob*, or strangers, such as exponents of the dominant Muslim culture, tourists visiting the jungle or characters and nations presented in the media and in action and erotic B movies.

The Orang Asli have generally often been presented in anthropological literature as non-violent peoples. Accounts depict portraits of peaceful and shy peoples who have been enslaved, manipulated and persecuted by other dominant groups during turbulent periods throughout history. Though the Orang Asli have certainly more frequently been the victims rather than the agents of violence,

this doesn't mean they are unable to understand, react to, confront and even implement acts of violence. This appears to be particularly evident in the last years as the Batek and Jahai have had to deal with unprecedented forms of violent-'othernesses' both on national as well as transnational levels.

Aggression and conflict management in Hadza today: age and gender differences

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Hadza are nomadic hunter-gatherers, known for their egalitarianism. Up-till now some of them continue to live their traditional way of life, and our study was conducted in one of such populations. The goal: to estimate the general level of aggression and conflict management in modern Hadza community and to test the age and gender differences on aggression.

The data were collected in 2006-2012 in Mang'ola, Lake Eyasi region, Tanzania. The sample size: 236 children (114 boys and 122 girls) and 317 adults (173 males and 144 females). Levels of verbal aggression, constructive conflict resolution, third-party interventions and protection of victimized peers in schoolchildren were recorded. Hadza boys rated themselves higher on physical and indirect aggression and dominance compared to girls. It was found that bush and boarding school children behaved differently, particularly, children living in the bush, rated themselves higher on indirect aggression. Adult males rated themselves higher on physical and verbal aggression compared to females.

Since mid-1990th Hadza became an object of ethno-tourism, and, consequently, began to earn money from tourists and spend them on cheap alcohol. In this paper we are going to discuss the new problems with which Hadza faced due to alcohol intake, both inside their community and during interactions with neighboring groups. The field research was conducted with financial support from RSFH, and under approval from the COSTECH.

Batek, Mendriq and Jahai topophobia in peninsular Malaysia

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"We are frightened, we are frightened!" – a Batek man living within the Taman Negara national park describing his intense fear of meeting heavily-armed international poachers.

"They will kill us if we go there!" — a Jahai woman living near the Thai border explaining her fear of encountering 'dangerous' Malays when visiting a much-loved waterfall nearby her village.

This paper examines Batek, Jahai and Mendriq topophobia; focusing on how landscape transformations and global flows are altering indigenous perceptions of the environment.

Forager and former-forager Orang Asli groups of Peninsular Malaysia usually imagine their forest homes as safe places — a secure world held in opposition to the dangerous world inhabited by 'gob' (strangers) existing beyond the forest. However, in recent years the numbers of outsiders entering the forest has massively increased. At the same time, life within government resettlement villages has become more difficult due to increased missionary activity and social control. This paper examines how these intrusions have created places of fear and danger within Batek, Mendriq and Jahai Orang Asli territories.

Deforestation, bio-political land classification and rapidly-increasing flows of globalization have radically transformed Malaysian rainforests. Consequently Orang Asli contact with non-Orang Asli has dramatically increased. In government-sponsored resettlement villages the Orang Asli have frequent contact with government workers, Islamic missionaries, plantation workers, teachers, traders, health workers, and other actors. Within the forest, the Orang Asli often encounter tourists and tourist guides, international poachers, army personnel, police and wildlife workers and anthropologists. Many (but not all) non-Orang Asli human actors are considered as dangerous 'others'. The Orang Asli also describe their forests as being populated with an array of 'other-than-human persons' some benign and some extremely dangerous. Movements of non-Orang Asli persons, both human and 'other than human' are often restricted to particular locales within or near the forest. This paper analyzes how landscapes are being described by the Orang Asli in increasingly topophobic language focussing on particular places (in villages and the forest) where violent 'others' are often encountered.

Untangling war and homicide: A case-by-case analysis of lethal aggression in a sample of 21 nomadic forager societies

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Some researchers have concluded that nomadic foragers are not particularly warlike (e.g., Kelly, 1995; Fry, 2006). Others disagree (e.g., Ember, 1978; Pinker, 2011). Bowles (2009) uses a small sample of 8 societies (mostly nomadic foragers) to estimate the percentage of war deaths in the Pleistocene, reporting an average of 14%. We suggest that Bowles' sample is not only tiny but non-representative of nomadic foragers generally, that the number of deaths counted as forager warfare have been exaggerated, and that Bowles' definition of war—"events in which coalitions of members of a group seek to inflict bodily harm on one or more members of another group"—encompasses homicides and even nonlethal brawls along with war.

The current study has two intertwined aims. First, it critiques the sampling, methodology, definitions, and conclusions drawn by Bowles (2009). Second, it attempts to remedy these problems. It presents a detailed analysis of data on lethal aggression derived from a sample of 21 nomadic forager societies in the Standard Cross-Cultural Sample. To pre-empt quibbling over definitions of war, the current study considers *all* cases of lethal aggression without *a priori* classifying cases as homicide or war. This allows an assessment of the reasons for lethal aggression (e.g., over a woman, for trespass), the relationship between perpetrators and victims, and the social outcomes (e.g., payment of compensation, a revenge killing). Men are almost always the killers. Much lethal aggression stems from personal motivations (e.g., over a particular woman). Seeking revenge for a prior killing also is a common theme. This research provides a new level of analysis that should contribute to resolving important questions about the nature of nomadic forager war and the antiquity of war.

Wednesday 26th June 2013

Lecture Theatre A

Dance and Ritual

Chair: Jerome Lewis

Session abstract

Dance and ritual performance are often highly valued by hunter-gatherer populations and their neighbours, yet they are rarely the focus of contemporary ethnographic enquiry. In this session we invite scholars to contribute papers that focus on diverse aspects of ritual and dance performance in hunter-gatherer societies as they relate to cosmology, economy, gender, politics, mythology, ideology, life-cycle transformations, music, education, intra and inter-ethnic relations, art and aesthetics, material culture, or as they illuminate specific local concepts such as 'joy', 'play', 'trance', 'spirit', 'sharing' or 'communication'.

Why does *epeme* have to be danced at dark moon?

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The most important Hadza ritual is the *epeme* dance, which takes place on moonless nights. For several nights, in the period between last quarter and early waxing moon, men and women divide into separate groups, the women sitting together and singing in polyphonic chorus as the men, one at a time, perform a special dance.

While these and other details have been described, their ultimate rationale remains unexplained. Why moonless nights? Why sing in the dark? Is *epeme* unique – or a variation on a much wider theme? Attempts to address such issues are held back by the fact that in the literature on hunter-gatherers, there is no *theoretical* place for the moon. References to lunar phase, while not uncommon, have never been put together within a theoretical framework capable of anticipating or making sense of the details.

This paper situates the Hadza *epeme* dance in a wider theoretical context, noting that hunter-gatherers are not simply hunters – they may also be hunted. Predators such as lions have vastly superior night-vision to that of humans. For our hunter-gatherer ancestors, the difference between full moon and dark must often have been a matter of life and death. Hadza women singing in polyphonic chorus are not the only African voices to insist that they are scaring away nocturnal predators – ‘singing for our lives’. Constraining opportunities for travel, hunting, social aggregation, sex and the planning of all future collective actions, the presence or absence of nocturnal light must have decisively shaped the way hunter-gatherers across all continents once conceptualised time, ritual, fertility, reproduction, hunting luck and the maintenance of egalitarian relations.

Hadza gender ritual – *epeme* and *mai-toh-ko* – considered as counterparts

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Relative to the large behavioural ecology literature little has been documented on Hadza ritual activity. Nor has it been placed in context of myth and narrative. This is a serious lack given the agreement of both social anthropology (Durkheim, Turner, Rappaport) and more recently Darwinian anthropologists (e.g Sosis) on the central importance of ritual as a medium for establishing symbols and showing commitment to the group.

This paper examines the relationship of the two gender rituals, the more regular monthly *epeme*, and the less frequently performed female initiation, *mai-toh-ko*. Both sexes are participants in each ritual, but *epeme* is governed by male-held ‘secrets’, while *mai-to-ko* is governed by female ones. Drawing on a case study where the two rituals ran concurrently, one by night, one by day, I will link them as counterparts in a gender contest. The key myth on origins of *epeme* – a male ‘secret’ – is also the source for dramatic ritual enactment by women and girls in *mai-toh-ko*.

While *epeme* respect rules underpin Hadza ritual and economic life, the importance of *mai-toh-ko* for women's solidarity is indicated by its greater costliness. The relationship of these contesting but counterpart rituals fits a model of a 'pendulum of power' swinging between men and women (cf. Lewis, Finnegan), implying that hunter-gatherer gender relations should be considered as dynamic.

Recreating a special world of time: the *Ejengi* ritual among BaYaka Pygmies

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The forest spirit called *Ejengi* is common to Aka, Baka, Bayaka, Mbendjele, Mikaya and probably other Western Pygmy group. This paper presents key aspects of the way that Mbendjele in northern Congo-Brazzaville describe this mysterious forest spirit, why they call him the most powerful forest spirit and how *Ejengi*'s ritual symbolism and associations are at the heart of Mbendjele society. In particular, initiation into the *Ejengi* secret association replays an ancient drama at the heart of relations between men and women, and the emergence of society as it exists today.

The role of the body in Bushman healing dances

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This paper examines how the stylized and improvised practices of African Bushman 'dancing' relate to the creation, transformation and persistence of Bushman knowledge. Bradford Keeney argues that the Bushman healing dance may involve trancing but the key component and aim of these dances is to induce transformational states through shaking. I explore how the rituals and methods of dancing centre around mechanisms of stimulation, including shaking, rhythmic movement and sound, pain, blowing in the ears, heat, prodding, vibrational touching, smell and staring. Building on Keeney, I examine how this

repertoire of techniques is utilized and how they configure and contribute to the ideational landscape that underscores Bushman life. My analysis draws on ethnography, personal participatory experience and physiological interpretation from a range of disciplines, including biomedical analysis, Batson's cybernetics and osteopathy.

Naro San healing dances and resistance to conversion

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In the Ghanzi District, Botswana, the past 120 years have seen both local and national elites, alongside missionaries, making persistent efforts to incorporate Naro San contemporary hunter-gatherers into semi-feudal and capitalist systems. While these efforts have had considerable effects on the ability of the Naro to pursue a hunting and gathering mode of subsistence, they are said to have had "no deep or lasting impact" on their religious ideas and practices.

These ideas and practices have long featured particular animals and mythological figures which have been said to stand for core values upon which their sociality depends, and to play a vital role in inculcating these. Recently, Naro San community members and development assistants have come together (through the Pabelelo San Values Project) to uncover these core values and implement them into indigenous leadership structures. Interestingly, the presence of mythological figures and animals in their representation has been overwhelming. Using Naro healing dances to examine these issues in more detail, this paper explores the extent to which these figures and the rituals within which they surface, serve as a discourse through which emergent inequalities of power, wealth and prestige are negotiated and resisted. Furthermore, drawing on recent literature on the anthropology of religion, this paper interrogates the semiotics and social-aesthetics behind how and why their religiosity resists conversion.

Ritual, dancing and children in Aurukun

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The paper discusses some aspects of contemporary everyday life of a remote indigenous community in North Queensland (Australia). The author is especially interested in the modes of resistance of Aurukun aboriginal people to the policy of Queensland administration and to the activity of local authorities. The main attention is focused on the role of traditional rituals, dancing and singing as the means usually used for such a resistance. The paper also outlines efforts by Aurukun adults to transmit to the new generation their attitudes of opposition to the "the ways of the white men", as well as their knowledge of traditional artistic heritage and skills of traditional performance.

The modes of training, teaching, instructing children and young people as well as the extraordinary imitative and mock talents of the kids are described in the paper. The paper is based on the field data obtained by the author in 2005-2009. Special attention is paid to the role of children in so called House Opening ceremonies. Certainly, such ceremonies were already described in Australian and British (by D. McKnight) publications and professionally made movie about one of them exists (J. MacDougall, 1980). But these ceremonies, representing a colorful, constantly transforming and creative mingling of the Wik traditional, Torres Strait Islands, Polynesian and European elements, are very flexible in their nature. They differ considerably one from another, and every family has its own traditions, which are permanently modified in various ways, people constantly create new songs and dances, use new musical facilities, invent new decorations and so on. Some video material could be presented too.

***Likano*, the cosmology of the Baka forest - Oral tradition of the Baka people living in southeast Cameroon**

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Likano are the orally and musically communicated folklores of the Baka people living in the tropical-forest area of southeast Cameroon. The stories range from those that are comedy like to those that contain ethical challenges or lessons, however all depict the interactions between human beings and anthropomorphic figures like animals, spirits and God (Komba). All Likano can be regarded as reflecting the attitude and philosophy of the Baka people. It is important to note that Likano continue to be created, and that they are as much a reflection of the past as a comment on the present.

When the Baka people perform rituals or hold a festive gathering, Likano are often interwoven with performances of the spirits depicted by the members of the band. The dynamic presentation is highly interactive, and includes singing, clapping, chanting and playing of musical instruments. The stories can be communicated with or without the use of language, relying only on melodies. It creates a musical experience that is shared by the collective group, and allows for the listeners to take an active role in the delivery of the story. Likano is brought to life by the act of creating music, not as a separate form of expression but as a representation of a shared imagination, and is wholly integrated in the method of passing on these stories.

The paper depicts the changing cosmology of the Baka people by analysing Likano from three different age group and two genders.

Sharing and borrowing rituals

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The Baka of Southeast Cameroon live together with several other populations among which the Nzime, the Bangando and the Kwele, depending on the area. They share not only economic, but also social and religious activities. Therefore, several rituals bring together Baka and their neighbours in a shared practice, although ritual responsibilities stay in the hands of the "owners".

In some cases, ritual practices are transposed from the neighbours culture to the Baka's where they are then amended both from a ritual and musical point of view. This is the case of the circumcision ritual *beka* and of the healing and alliance ritual (*e*)*dio* which have spread over the area probably from the Bangando to the Kwele and the Baka. From a shared practice, these rituals have

evolved towards independent entities which are differentiated in each of these cultures.

I propose to question the motivations for sharing and borrowing rituals and to shape out how the adaptations of the exogenous rituals bring to evidence some fundamental issues of Baka philosophy (eg. gender complementarity; collective responsibility of the individual; etc.). These issues may especially be expressed through sound and music.

On the one hand, the borrowed rituals are adapted to the Baka's musical, ritual and linguistic system following the social and esthetic standards. On the other hand, they enrich the Baka culture with exogenous elements. In both cases, the outcome is the construction of new identities that are often regional and do not concern the entire ethnic group.

Music-making in the *bwete* ritual and the patterning of the relationship between Babongo Pygmies and their Mitsogo neighbours (Gabon)

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The *bwete* is a male initiation rite usually attributed to the Mitsogo, the Babongo Pygmies' neighbours. A Mitsogo initiate once told me: "The *bwete* isn't for Pygmies, but it's better if some participate. The ritual will be more successful". Knowing that the Babongo also undergo *bwete* initiation, the apparent contradiction this comment contains raises questions regarding the nature of Babongo involvement in this ritual, and more generally, regarding the nature of the relationship between the Babongo and their neighbours.

An analysis of the music-making process in *bwete* initiation allows us to clarify the logic of this relationship. The one-way transfer from the Mitsogo to the Babongo of the recurrent musical pieces of the *bwete* repertoire emphasizes the latter's purported origin. Conversely, the Mitsogo's recognition of the Babongo's superior musical expertise underlies the repertoire's capacity for change; indeed, the Mitsogo taking advantage of the Babongo's musical innovations by integrating them into their own performances. At the same time, these opposing dynamics are coupled with social representations that identify both populations

as ritually autonomous. On the one hand, the figure of the “mythical Pygmy” is taken by the Mitsogo to be a founding reference of their ritual, thereby exploiting the Babongo both mythologically and from a performative perspective, while on the other hand, the Mitsogo are strictly excluded from specifically Babongo ceremonial practices.

This paper outlines this relational model in which two modes of identification (the claim of a distinctive tradition *versus* creative proficiency) and two attitudes towards others (inclusion *versus* exclusion) are conjoined, and considers its relevance beyond the musical field.

The Bagyéli of south-west Cameroon: The impact of sedentarisation on musical and dance practices

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The Bagyéli of South-West Cameroon are going through a process of government-enforced sedentarisation since the 1960s. A few groups still have a forest-oriented life-style, but most Bagyéli are now settled in villages along roads, living in close contact with Bantu farmers. Sedentarisation campaigns have had a great impact on Bagyéli’s musical and dance practices since they are deeply bound to hunting and gathering. Gatherings of several camps for net hunting or initiation rites are made difficult by the demands of agriculture that restrain the flexibility of community members.

Due to this phenomena, a whole set of musical repertoires are disappearing, and others have their meanings reinvented to fit better with Bagyéli’s new way of life. Different rituals, intrinsically interlinked with practices such as net hunting or women’s initiations are not performed anymore, while others take a more and more important place in Bagyéli’s musical patrimony. In this paper, I will explore the consequences of the process of sedentarisation on the Bagyéli’s musical and dance practices by observing the social and musical aspects of these changes, concerning both performances and the meanings and representations associated with them.

Baka ritual flow diverted

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Ethnographers of Central African hunter-gatherers have hitherto emphasised ritual as a levelling mechanism that strengthens community spirit and mediates power between individuals and subgroups. Pursuant to recent research with a Baka community in Cameroon, now largely abandoning the hunter-gatherer lifestyle, I analyse ritual alteration as both cause and effect of social crisis and rapid transformation towards a less egalitarian mode of sociality.

Increasingly forced into convening with centripetal forces and integrating into the capitalist economy, the rhetoric of development has been adopted. The community talk of a history of isolation, as the first road to the area was constructed in 2007 by a mining corporation. The result of the new road and burgeoning mining activities is that the community has been precipitously exposed to new peoples, lifestyles and technologies. They now perceive their former lifestyle as deficient. A new preoccupation with development, integration, and wealth contaminates former ritual activities of music-making and dance. The recent influx of money, cheap alcohol, electric generators and sound systems has changed the character of ritual events to that of the nightclub or *boîte*, where Afropop is preferred to polyphonic singing. Excessive consumption of alcohol disrupts community-enhancing ritual as it leads to outbreaks of violence, is perceived as an essential motivator to bring people together, causes competition for resources to drink, and excludes the disenfranchised from initiation and participation. Rather than consolidating specifically Baka community and ideals, *boîte*-styled events are corrosive phenomena allowing the infiltration of commercial values and a hierarchical flow of power.

Resisting the bulldozers: rituals of appropriation and rituals of resistance among the Ogiek of Mount Elgon, the Vai of Liberia, and UK

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Speaking to Vai communities whose farmlands, rice swamps, fishing creeks and sacred forests had been bulldozed by a Malaysian palm oil company, the President of the Liberian Senate said (September 2012):

"Our actual intention is to change your lifestyle from farmers to workers so you no longer grow cassava or rice but work for money to buy rice and cassava that has been grown by someone else. "The problem is when people want to still grow their food and not depend on someone else. It's very difficult for us . . .
"We say to you: no longer will you have land to grow rice, cassava and peppers. That may be enough for you, but it is not enough for us. It is difficult, really difficult for us. "Are your rights being overridden by the State deciding it is best to bring in concessionaires to take away your land? We want you to have schools, we want you to get up at 8 o'clock to get in for work at half past 8."

Hunter-gatherers, farmers, crofters, transition towners, road protestors and academic nuclear base blockaders have much in common. This is an exploration of the rituals of appropriation and the rituals of resistance - from the Ogiek of Mt Elgon in Kenya via the Vai of Liberia to the UK. Does resisting the blueprint bulldozer require a resilience that is grounded in vulnerability?

The medical act like a ritual in the Gabonese Baka community

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This presentation focuses on the social dimension of disease. According to this aspect, disease perception is related to the culture of the community concerned. The endemic point of view will be preferred. So the illness is seen to be part of a whole where every element (humans, animals, spirits, forest, earth, life, etc.) has his place. When a problem appears, the balance is broken (cf. functional model of Laplantine). Although all the members of the community know that somebody is ill, the patient is responsible of his healing (from 2 years old).

The three types of disease will be presented and the misfortune will be taken as an example. The classification of different disorders is done according to their causality (no chance so yaws as the same level than misfortune). Although the medicine man, *nganga*, prepares drugs from different plants, the medical act would certainly not be as successful without the beliefs that accompany it (van der Veen). The circumstances (the conditions of the treatment) in which the drugs have to be taken will be listed (place, times, who, how, etc.) and will be included as characteristic elements of ritual.

Besides the fire dance *bomba* performed by the medicine man is essential to perceive the environment of the patient. Through the *bomba* fire, the spirits will communicate with the *nganga*. That is why the *bomba* dance is not only used for medicine but also for other events (i.a. travel, decision). The separation between the natural etiology and the magic etiology is ideological (Laplantine).

Because of the recent changes, is that the medical act will continue to be as ritual?

The gods of others: Shamanism and the Chepang of Nepal

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Among the Chepang former hunter-gatherers of Nepal, many communities adhere to a highly dynamic system of beliefs and ritual practices centered around the mediation of a shaman, known in the Chepang language as a *pande*. Rituals performed by different *pandes* display a high degree of variability, yet are structured around a consistent cosmology.

Within this cosmology, shamanistic mediation with the spirits of trees, rocks and even natural phenomena are crucial for maintaining the cosmic order underpinning human well-being and health. Yet this cosmology appears remarkably versatile and adept at incorporating outside influences and ideas. In one instance observed in Chitawan District, a *pande* chanted requests to specific Chepang deities, as well as those of Hinduism, Christianity and Buddhism, seeing

all as legitimate agents capable of affecting human affairs. Despite pressures to identify as Hindu, and the spread of Christianity, many communities continue to adhere to traditional practices. The cosmology which underpins Chepang ritual practice may very well owe its resilience to its egalitarianism and lack of sentential orthodoxy. By bringing in the gods of other religions, Chepang ritual is perhaps less syncretic than amoebic, in terms of its capacity to engulf content into its own fluid yet singular form.

The alimentary construction of social and supernatural identities. Commensality codes and cultural resilience of the Eastern Penan

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Only remnant groups of the Eastern Penan of Sarawak, Malaysian Borneo, sustain themselves as hunters and gatherers. Extensive logging has undermined their traditional way of life, and most Penan are presently relegated to a life as impoverished farmers. While resilience in terms of regaining their lost habitat, and resumption of life as nomadic hunters and gatherers seems impracticable, the Penan maintain social ways, and uphold "mentalities" that seem distinctly associated with their traditional hunting and gathering nomadic society.

This presentation gives one particular example of this phenomenon, showing how the social construction of gods and spirits on the one hand, and morality on the other, go hand in hand, and how this relationship - which forms important aspects of Penan ethics - is created during communal eating. In the face of ruthless logging and industrious Christian missionaries, the Penans' culture is certainly vulnerable, but it also holds a potentiality for recycling old ways under new conditions. My assumption is that religious notions and social rules associated with food and eating epitomise these cultural functions, and that an over-all understanding of the Penans' traditional world-views, as well as their present situation, may well depart from just that. The presentation is partly based on first-hand observations in the field, and partly on the study of Penan narratives.

Wednesday 26th June 2013
Lecture Theatre B

Cultural Resilience in Hunter-Gatherer Societies Past and Present

Chair: Jana Fortier

Session abstract

In the context of hunter-gatherer studies, "resilience" refers to the ability to defend and maintain traditional beliefs, and to create new cultural practices, that are concordant with the lifestyles of people who depend upon food procurement, rather than food production, as the economic foundation of their society. Since the beginning of the Neolithic cultural period, a growing number of societies founded upon the procurement of plants and animals had to live with, and at times compete against, societies founded upon the production of crops and livestock. Over time, expanding populations of technologically complex polities have become dominant, with foraging societies becoming enmeshed within the current globally interdependent socioeconomic system. Whether adapting to ancient colonial regimes or modern ones, foraging groups have found ingenious ways to adapt, and occasionally confront, non-egalitarian polities, and they have done so in numerous ways. This session will both theorize and demonstrate some of the strategies of cultural resilience carried out by past and present foragers. These strategies may include the creation of advantageous trade relations; preservation of indigenous languages; negotiations for human and cultural rights; continuation of traditional plant collecting in government-owned forests; reinforcement of healthy images of identity under conditions of impoverishment; drawing on traditional knowledge systems during environmental disasters, etc.

The Ju/'hoan San of Nyae Nyae: Cultural resilience since Namibian independence

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The Ju/'hoan San of Nyae Nyae, Namibia and the nearby Dobe-/Xai/Xai areas of Botswana are said to be the most fully described indigenous people in all of anthropology. Since the time of Namibian Independence from South Africa (March, 1990), Namibian Ju/'hoansi have had to find creative ways to adapt to and confront a number of non-egalitarian polities, from neighboring pastoralists attempting to take some of their land and grazing resources to governmental and industrial interests seeking to turn some of their land into commercial farms and mines and threatening their ways of life. Strategies they have adopted include examples from all areas identified in this session on foragers' cultural resilience: these range from experiments in ingenious trade relations such as crafts sales, native plant collecting for domestic use and for local and overseas markets, ecotourism ventures; the preservation and development of the Ju/'hoan language and heritage through educational, oral history, and recording/translation projects; negotiations for human and cultural rights at local, national, and international conferences and legal fora; continuation of traditional hunting and plant collecting in their nationally recognized conservancy; involvement in reversing deleterious public images of themselves in order to strengthen identity and develop their political voice; and drawing on traditional knowledge systems to promote a healthy approach to local and regional environmental and economic sustainability.

Cultural resilience and the language of foraging

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Cultural resilience represents a set of political actions, but ones which are not simply visible political strategies designed to protect hunter-gatherers from the proselytizing and hegemonic cultural practices of aggressive agrarian polities. Rather, I interpret cultural resilience as a fortress of tightly intertwined ideas made manifest through both pragmatic linguistic

strategies as well as physical actions. Toward a better understanding of cultural resilience among foragers, this essay will explore dimensions of the language strategies employed by two hunter-gatherer populations, the Raute (ISO 639-3: rau) and Ban Rawat (ISO 639-3: jnl). Closely related Tibeto-Burman speaking groups, the Raute continue to maintain a foraging subsistence-based economy, subsisting on langur and macaque monkey, wild tubers, and carving woodenwares which they trade to outsiders for trade goods such as rice and cloth. The Ban Rawat, however, have developed a forest commodity-based economy. Having been forcibly settled by the Governments of India and Nepal beginning in the 1980s, they now do part-time subsistence foraging for Indian porcupine, bats, sambar deer, and edible wild tubers. But more of their subsistence derives from procurement of forest goods, including forest edibles, woodenwares, and firewood which they sell for rice, lentils, and other commodities. In the face of pressures to assimilate by surrounding agrarian communities, the question I will explore is, "In what ways have the Raute, and especially the Ban Rawat, expressed their cultural resilience?" Specifically, what linguistic features, language strategies, and/or underlying ideologies help them maintain their foraging-based existence? Exploring linguistic strategies as one dimension of cultural resilience, my essay will present examples from ethnographic interviews with Raute and Ban Rawat speakers. Examples will feature 1) metaphors, metonyms and other tropes referring to foraging-based concepts; 2) grammatical choices Rautes/Ban Rawats make that indicate underlying ideologies which support the foraging mode of production; and 3) archaic Sino-Tibetan "anchor" words, or words with etymon that preserve key foraging ideas, such as the centrality of egalitarianism and kinship-based social relations. What can we learn from two of the hunter-gatherer societies that have endured enormous pressures to assimilate? One answer lies in their language of foraging work and trade

The Agta of the northern Sierra Madre: Livelihood strategies and resilience

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Anthropologists, missionaries and adventurers have since long predicted the disappearance of the Agta as a distinct cultural group. With ongoing

deforestation and unremitting immigration of land seeking rural poor into Agta territory, it was feared that they had no other future options than to become an underclass of landless farm labourers.

Indeed, the Philippine rainforests on which the Agta depend economically and culturally continue to suffer from encroachment, illegal logging and infrastructural development – even in protected areas. Also, the Philippines' rapidly growing population is ever expanding into the once sparsely populated Sierra Madre. This national population growth sharply contrasts with the Agta population's lack of growth: suffering from high mortality rates, especially among children, the Agta's life expectancy at birth is among the world's lowest.

This paper discusses the results of ethnographic fieldwork that I conducted among the Agta of Isabela Province over the past decade. It presents data on livelihood strategies, time allocation, demography and diets of river- and coast-dwelling Agta groups. Based on empirical data I will show that while the Agta do face serious problems, they are still essentially a hunter-gatherer people with a distinct culture, social organization and identity. I will argue that various forms of social and economic adaptation explain for the Agta's previously under-recognized resilience. The paper will further demonstrate that in order to understand hunter-gatherers' resilience and vulnerability, it is essential to take intra-cultural variability into account.

Hunter-gatherers or autonomous entrepreneurs?: producing cultural resilience in the pluralistic social landscapes of equatorial Africa

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The classic hunter-gatherer studies paradigm presumes that cultural resilience among societies deemed "hunter-gatherers" is essentially an automatic process, whose pre-conditions are social isolation and faithful adherence to a particular mode-of-production. This paper problematizes this model by considering cultural resilience to be a product of human action, the cultural frameworks reproduced to be political or ideological as well as economic, and processes of cultural reproduction to usually unfold in pluralistic landscapes encompassing various types of societies. In order to explore these issues, this paper seeks to explain how the equatorial African peoples referred to as "Pygmies" have managed to reproduce their unique cultural forms despite millennia of interaction with outsiders. To do so, it focuses on the forms of political culture that govern interaction both within Pygmy communities and with larger

regional landscapes, identifying the principles of "autonomy" and "entrepreneurialism" as being key to these contexts. Interactions with various historical developments involving other social groups are then traced through time to show how these cultural principles have provided one of the primary means through which Pygmies have managed to take advantage of historical opportunities in wider social landscapes yet still reproduce a unique cultural habitus (Bourdieu 1977). The paper concludes with a brief exploration of how these enduring cultural principles can be applied to the contemporary context of "community forestry" efforts, in order to suggest potential solutions to one of the primary vulnerabilities facing Pygmies today: their inability to preserve local economies in the face of forest exploitation by outsiders.

Baka and Bakola strategies of resilience in Cameroon

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This thesis proposes a thorough analysis of the impact strength of the changes observed within the communities of hunters-gatherers, Baka and Bakola of Cameroon. These groups consist of more than 45 000 individuals and speak about two languages (tongues): oubanguienne and Bantu in an environment bantouphone. A comparison with the other languages (tongues) of the same linguistic subgroup highlights the specificities of the baka and the bakola. These two group ethnolinguistics seem to have maintained the relations which join a dynamics of exchange of skills (hunting-gathering vs fishing mastery of iron). The lifestyle of the Baka and Bakola remains still largely characterized by mobility in the forest. However, the settlement imposed by government contiguity with the Bantu as well as the growing influence of globalization lead to transformations with respect to which the Baka and Bakola looking to position themselves. These developments affect the language system (and use) as well as many socio-cultural practices (housing, mobility, food, livelihood, religion, etc.).

This thesis seeks to identify strategies set up by the Baka and Bakola to cope with these changes, describe and assess the impact, taking into account the diversity of situations. It has, moreover, a critical principles of

categorization based on the study of several lexical areas (flora, fauna, illness). Some changes may appear on the surface without question, fundamentally, their attachment to the forest and some ancestral values. However, different exogenous pressures (settlement, globalization) and endogenous (attitude of individuals, transmission) then determine the degree of progress of the various transformations, should not be undervalued as they are a threat to language, knowledge of the flora and fauna and some socio-cultural practices.

Early Holocene hunter-gatherer sociocultural resilience and palaeoenvironmental change in the southern North Sea basin

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During the Early Holocene the southern North Sea basin witnessed a range of both gradual and abrupt palaeoenvironmental changes. Research in Belgium and the southern Netherlands over the past decade has indicated that hunter-gatherer societies responded and adapted to these different kinds of palaeoenvironmental changes in a variety of ways. Current evidence suggests different sociocultural strategies to gradual environmental change between wetlands and sandy lowlands during the Preboreal and first half of the Boreal. A major change occurred in the second half of the Boreal, around 9.3 cal. BP, with the coalescence of these different strategies into a more unified sociocultural group, the so-called 'Rhine-Meuse-Scheldt' (RMS) culture. Radiocarbon evidence indicates that the formation of the RMS was contemporaneous with the 9.3 cal. BP abrupt cooling event. The formation of the RMS is indicated by changes in settlement, the increase of long-distance raw material distribution, a radical change in projectile technology, and possibly, a change from inhumation to cremation burials. All available evidence therefore suggests that the RMS was a social network that ensured interaction and information transfer across different ecological zones and thus provided more security during a period of environmental uncertainty. The RMS network not only facilitated resilience to another abrupt cooling event at 8.2 cal. BP, but also likely conditioned the unique mode and tempo of the transition to agriculture in the region. In this paper we present evidence of the role of long-distance social networks in the resiliency of Early Holocene hunter-gatherers to palaeoenvironmental change.

Hunting technologies, histories and adaptability in the Congo River Basin

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Forest communities throughout the Congo River Basin employ a range of technologies to secure their subsistence production. Looking at histories of hunting technologies and their place in changing social contexts of the Congo River Basin, this paper analyses changes in the use of spears, axes, knives, and other hunting technologies. The paper argues that we can more fully analyse and appreciate contemporary admixtures of economic engagement by viewing technology over the long durée, looking at how people's uses of technologies change over time as forest communities engage with broader political, economic, and social factors. For example, in southeastern Cameroon Bangando and Baka communities have endured and engaged with historical dynamics such as conflict and forced migration, colonialism and regimes of forced labour, plantation economics, settlement and missionization, establishment of nature conservation programs, and the emergence of new kinds of markets—some licit and some illicit—for forest products. As analysed in this paper and presented in the accompanying poster, Bangando adapted their eighteenth century technologies for warfare in the grasslands to tools for hunting in the forest in the nineteenth century, later adding tools for agricultural production in subsistence gardens and stands of commercial crops such as cocoa in the mid-twentieth century, and technologies for commercial hunting in the late twentieth century. By looking at the dynamic ways that forest peoples have engaged and continue to use hunting technologies, we are able to recognize the adaptable agency of forest communities with renewed appreciation.

Penan folk tales: Themes, forms and functions

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There has been little examination of Eastern Penan literature. At the same time, Eastern Penan are undergoing cultural attrition in a number of, material and symbolic, respects. Our purpose is to collect examples of, primarily, traditional myths (sukét), and to examine this material as a means of gaining a richer understanding of the forms and functions of

Eastern Penan literature. The limited amount of this literature currently available has not always been presented as reliably as it might have been (e.g. Rubenstein 1985 and 1990), or there appears to be but one token (e.g. Needham 1964; and Langub 2001).

Sukět are described by McKenzie (2007: 184), as imagined and emerging out of tradition, often with mystical dimensions, containing elements of morality, and relating to the genesis of fauna and experiences salient to Eastern Penan. Langub (2001: 2) classifies sukět into three main kinds (good, bad, and playful) and suggests that their primary function is entertainment. Rothstein (2012) has collected 25 sukět stories with the assistance of interpreters. These samples seem to have three interlinked functions: 1) to entertain; 2) to reinforce various cosmological traits; and 3), to emphasize a set of ethical norms. Furthermore, sukět stories are related to the relatively few, albeit important, rituals in Penan society. Recently there have also emerged more modern kinds of politicised narratives (e.g. Bending 2006) that relate closely to Eastern Penan perceptions of the impact of the wider world.

Our main focus is on themes, forms and functions of more traditional sukět, while looking to see how these relate to emerging and critical forms of narrative which, in turn, can contribute to the conference theme.

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Behind the forest: The ethnic identity of Orang Kubu, Jambi- Indonesia

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This paper will be more discussion about how the relation between the process of marginalization that is received by Orang Kubu¹ (well known as Orang Rimba, the people who living in the forest) as ethnic minority group in Sumatra, Indonesia, and their relationship with socio-political context of Indonesia and how they struggle to survive with articulating ethnic identity. Most literature that dealt with ethnic minority groups experienced with colonial encounter point to consequences of process of conquest and domination in the form of alienation, deliberate dismantling of traditional social and political structure. There few literatures that analyzed closely the cultural aspect of the hegemony, namely the aspect of cultural impoverishment and social disintegration as a result of residential dislocation, caused by exploitation natural resources contained within localities the minorities traditionally resided. Typically, they were forcibly removed from their environment (mainly forest) by commercial and industrial expansion processes that are often assisted by the state. Respond this dominance is articulated in the form of ethnic identity construction. The appearance of their ethnic identity in my opinion is occurring as a result of inter-ethnic relation that exists in that region. The effort to articulate the ethnic identity, as the process of re-creation of cultural identity that refers to the pattern of beliefs, customs, values, attitudes, local knowledge and (bad) experience are now remodulated to form part of Orang Kubu ethnic boundary.

¹ Orang Kubu is one of the remaining hunter and gatherer groups in Sumatra island, Indonesia

Wednesday 26th June 2013
Lecture Theatre C

Childhood, child culture and social learning

Chair: Barry Hewlett

Session abstract

This session examines recent research on hunter-gatherer infants, children and adolescents. Diverse theoretical and methodological approaches are considered.

Questions and issues of interest include: 1) what are the distinctive features of hunter-gatherer childhoods; 2) how are representations of hunter-gatherer childhoods used and misused in other disciplines (e.g., evolutionary psychology) and the popular media; 3) how are egalitarianism, respect for autonomy, extensive giving, ethnobiological and other knowledge transmitted and learned by infants, children and adolescents; 4) does teaching exist in hunter-gatherers; 5) what are the roles of parents, siblings, the community in child development; 6) what do hunter-gatherer children and adolescents need to know to survive and adapt to other children (i.e., child culture); and, 7) what are the impacts of formal education on hunter-gatherer children?

How do children learn in hunting and gathering societies? The ecological, social, and cognitive background of learning and teaching in modern humans

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Why *Homo sapiens* could replace Neanderthals around 40 to 30 thousand years ago in Europe and other places on the earth? It is a big question having been tackled by many scholars for decades. We started a five-year multidisciplinary research project on the replacement problem in 2010. The key hypothesis of the project is that species-level difference of learning ability between Neanderthals and *Homo sapiens* led to the difference of adaptive behaviour that caused the replacement. As a team of anthropologists and psychologists in the multidisciplinary research we aim at understanding the characteristics of human learning behaviour drawing on the fieldwork in various modern hunter-gatherers.

Studies have revealed so far that children of hunter-gatherers learn various knowledge and skills in everyday life chiefly by observation and imitation, rarely depending on teaching from others in spite of the general idea that teaching, seemingly a unique method of learning in humans, should be quite useful and effective to transmit culture from generation to generation. Actually, hunter-gatherers do not refuse teaching at all, but they practice teaching in a different manner from that of school education. Although it is said that education makes human beings, we have not obtained a comprehensive understanding of the nature of education. We have to expand the idea of learning and teaching beyond the narrow scope of school education. I would like to discuss the ecological, social, and cognitive background of learning behaviour in children of hunter-gatherers and its relation to the evolution of modern humans.

Teaching in hunter-gatherer societies

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Cultural anthropologists Mead, Lancy and Rogoff indicate that teaching does not exist or is rare in small-scale cultures. By contrast, cognitive scientists Gergely and Csibra hypothesize that one type of teaching, called natural pedagogy, is a human universal and that it emerges in infancy. They propose that it is part of human nature and distinguishes human and great ape social learning. All of their research has been conducted in laboratories with Western infants. Videotapes of 10 Aka forager 12-14 month-olds in naturalistic settings are analysed to evaluate the Gergely and Csibra hypothesis. Results and a tentative taxonomy of teaching are presented.

The role of food sharing in Hadza children's social development

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Food sharing is a universal feature of human societies, and especially vital to hunter-gatherers such as the Hadza, where it helps mediate the risk of daily food shortfalls. Detailed anthropological studies over the last 30 years have shown that food sharing is a rather complex form of social interaction; one that can serve several functions, requiring sharers to balance the competing needs of individuals, families, and larger groups. Due to its complexity and its prominence in social life, food sharing presents two interesting developmental questions: 1) how do people learn to share foods, and 2) what does sharing teach them? I take up these questions using interviews, direct observations, and analyses of filmed food sharing events among the Hadza. These data show that food sharing is an important context for children's acquisition and practice of essential social skills. In the context of food sharing, children and adolescents learn 1) to overcome inhibitions and be more gregarious; 2) to act more fairly towards others; 3) to practice restraint; and 4) to bargain effectively with their peers. Children aged 3-6 experience an intense learning process due to their relative weakness, shifting dependency relationships within families, and their conflict with siblings. Forms of positive and negative reinforcement hasten the learning process, and when punishment occurs, it is most often carried out by third parties who are older kin.

How do children learn? The dynamics of local ecological knowledge and practice: A case study among the Baka (Cameroun)

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Researchers and policy makers are increasingly acknowledging the role of indigenous people and their knowledge of local environments for conservation and development. Yet, globalization and the increased presence of newcomers in lands that previously were mostly inhabited by indigenous societies are leading to rapid social change, with implications such as the loss of traditional cultures and knowledge. In this context, my work addresses the impacts of social change on the transmission of Local Ecological Knowledge (LEK) specifically; I study how processes such as market integration or education affect the transmission of LEK to Baka children. The Baka are one of several hunter-gatherer groups living in the Congo basin in Central Africa. They represent an ideal case to study the dynamics of LEK as they are currently undergoing dramatic social and cultural change and must increasingly confront their knowledge, uses and representations of the environment to those of new agents. I first describe the different ways in which children acquire LEK, and the relation of the transmission mode with the nature of the knowledge. Observed modes of transmission include non-verbal learning processes (e.g. observation, mimicry), or verbal learning processes (vertical, horizontal and oblique). The role in Baka communities given to children - who are considered since the early stage of childhood as "little adults" with responsibilities and duties - helps in our understanding of the acquisition of LEK through the different steps.

Playing to learn masculine hunting in the Gbaya of Central Africa

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The Gbaya people are hunters, gatherers and cultivators who live in the western part of the Central African Republic. They have a wide land area which represents about 300 km², for about 300 persons, staying under the protection of their ancestors. The dry season which lasts for 4 months from November to February is commonly named the "hunting period" as hunting is then the principal activity. While men are the principal actors of hunting with fires, spears, nets and dogs, women at the same time carry out a type of hunting on the burnt ground with a special tool called a "hoe-spade". All their ritual practices are for game, aiming to keep the hunter's good luck and his capacity to kill game. They concern all the techniques used to kill animals with tools, both masculine and feminine hunting. On the other hand, there are no rituals for gathering or cultivation. In this society, men and women have, all throughout their lives, an equal social value for hunting which is regarded as the most important activity.

In this oral tradition-based society, there is no teaching and the knowledge is transmitted by the direct observation without any verbal explanation. During childhood, from five years old and after, while the parents are gone in the bush for hunting, trapping, gathering or cultivating, children stay on their own in the village regrouping themselves to do a lot of activities. Boys make catapults or small bow and arrows to kill the birds and rats which live in the neighbourhood of the village. Boys and girls search for insects (termites, caterpillars, etc.) or wild plants. All of these are then cooked and eaten between them. They are self-sufficient and do not wait for adult help.

Hunting and in particular hunting with fires are very dangerous activities which children are not able and not allowed to do. When they are old enough, about 9/10 years old, they begin to go hunting with their mother when she goes on the burnt ground to kill rats. If they happen to go hunting with their father, a boy would be put up in a big tree to be able to look at the hunting out of danger. You have to know how to throw a spear before going hunting with the men.

Actually mastering this craft is essential for masculine hunting. To get it, boys play a special game. They make wooden sticks that they use as spear and throw them to pick something another one has thrown. It can be a rattan ring or a plant ball for the younger boys. For the older ones, the wooden stick has the iron pike which is ordinary on the spear base to pick it into the ground. In the boy's game, this pike has to pick a tree trunk another boy pull with a rope. All these technics figure different sorts of animals, the one who jumps, the one who walks the ground, the big one who is a big threat...

I will present this boy's game and will show how learning is done by a lot of repetition of the same gesture. While playing like this, learning is perceived as a fun and not as a work. That is true for hunting too that every man likes and does not consider annoying at all. I will also present photos and film of this game.

How do the Baka pygmies share the style of body modification?

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The Baka in southeastern Cameroon are one of the Pygmy hunter-gatherer groups living in the tropical rain forest of central Africa. They usually have many scars on their skin for treating disease or protecting themselves from disease. However, they also have some scars only for beauty. Sharpened front-teeth, tattoo, brand and piercing are common body modification among the Baka. Tattoos are observed on the Baka's face, arm, chest, abdomen, waist and leg, and have the greatest variety of design in the four sorts of body modification. There are two types of Baka's tattoo. The relatively 'traditional' type is consisted of short lines or small squares. In the other type, which is like modern tattoo, characters of people's name (usually that of their own), shape of leaves, scorpion or snake are young Baka's favourite motifs. This paper treats over 1000 Baka's data of body modification, observed in the East Province of Cameroon through my fieldwork over 42 weeks in 2010 and 2011. The diffusion of scarification is analysed, via the design variation by gender, generation, clan, area, ethnicity and individuality. Finally, their learning and sharing of skills are discussed.

Medical knowledge and beliefs: perspectives from Aka forager children

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Disease and illness unfortunately are part of everyday life. Cultures throughout the world have dealt with them by organizing them based on etiology and preparing medicinal and/or spiritual solutions to remedy them. While explanatory models for disease and illness have been extensively investigated among adults, research among children is scarce. Considering that cognitive abilities develop throughout childhood, it is likely that children perceive disease and illness differently than adults. In early childhood, children are thought to lack the cognitive ability to categorize the etiology and nature of diseases, a capacity that develops during middle childhood. Children also do not associate disease and illness with socio-cultural forces, something adults routinely do. Children, however, seem to be able to link disease with contamination at an early age. Here we examine children's knowledge and beliefs of disease, illness, and medicine among Aka foragers. Aka children grow up in an environment where infectious and parasitic diseases are a major cause of death, and infant and child mortality is high. Utilizing free-lists, and semi-structured individual and group interviews with children between 4 and 17 years of age, we examine the saliency of diseases and their remedies, what children say about the etiology of these diseases, why they choose certain remedies over others, and why they think these remedies are effective. Our findings highlight children's emic perspectives of disease and local medicinal practices, and how children's medical knowledge and beliefs change with age. We also highlight how understanding children's medical knowledge has clear public health implications.

Kinship and socialising practices among the !Xun of north-central Namibia

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Researchers have considered that the San, who are known for their foraging lifestyle, can provide vital clues for understanding human caregiving. It is known that San (Ju|'hoan) children form extremely close relationships with their mothers. After a long period of nursing, children develop strong attachments for child groups, which consist of multi-aged children. However, recent research has indicated that considerable cultural differences exist among San groups. Additionally, differences in the pattern of caregiving practices in relation to the emic classification of their social relationships have not yet been studied. This study examined interplays between practices in three major caregiving activity domains (physical care, verbal utterances, and feeding) and kin relationships among the !Xun, who are closely associated with agro-pastoral peoples and are neighbours of the well-studied Ju|'hoan. Although young !Xun children form close physical bonds with their mothers, other caregivers also play important roles in childcare. Specifically, it was found that young female relatives who resided near a young child engaged in caregiving activities more frequently than has been observed in their Ju|'hoan counterparts. The degree to which !Xun children and youths contribute depends on the type of child care. Children and youths contribute most to the physical care, followed by verbal utterances, and feeding, whereas adults contribute least to physical care, more to verbal utterances, and most to the feeding of children. Based on an analysis of these practices, I discuss how !Xun children are socialized into the web of their kin relationships while developing intimate relationships.

Hunter-gatherer adolescence

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This paper describes general features of hunter-gatherer adolescence and is based upon intensive field research among Aka hunter-gatherers of Central African Republic and limited reviews of other hunter-gatherer societies. Most studies of adolescence in small-scale cultures have been conducted with farming or pastoral cultures, and the vast majority of cultures in the Standard Cross-Cultural Sample (SCCS), used by Schlegel and Barry (1991) in their classic adolescent study, utilize these modes of production. Farming and pastoral cultures are known for their gender inequality, strong chiefs, deference and respect of older individuals (e.g., parents, older siblings), accumulation or defence of land or herds, regular warfare, and relatively high population density. These features are rare or absent in mobile hunter-gatherers. The differences in social systems and culturally constructed niches are likely to influence the daily-lived experiences and development of adolescents.

An understanding of forager adolescence is also important because humans were hunter-gatherers for 75 percent or more of the history of modern *Homo sapiens*, and human adolescent bio-cultural adaptations likely occurred at this time. Studies of foragers thus may provide one vantage point for obtaining insights into the nature of adolescence. This paper addresses the following questions: What generalizations can be made about hunter-gatherer adolescents? How are they distinct from adolescents in other cultures with differing modes of production? Does the emotional intimacy characteristic of forager infancy and childhood persist into adolescence? How do forager values of autonomy and egalitarianism impact adolescent development? This paper explores how these generalizations can inform our understanding of development, human diversity, and potential.

Hunting and gathering culture and school education: comparative studies on Baka children in 1990s and 2010s

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Hunter-gatherer children have their own culture and it is connected to the transmission of hunting-gathering culture. Children's culture is not heavily affected by the recent spread of school education. These were the results of my anthropological research in 1996-1998 among Baka children in the tropical rain forests in the East part of Cameroon (Kamei 1998 and 2002, in CHaGS8 and 9). Fifteen years later, with further spread of schooling and the introduction of hunting restrictions, how have children's culture and life been changed?

Through the participant observation among Baka children in 2012 in the same area, the following points were found:

- (1) School attendance rates increased both among boys and girls, the consciousness of schooling has already been shared among the majority of parents;
- (2) Play and subsistence activities (hunting, gathering and fishing) conducted by boys and girls observed out of school were not changed;
- (3) Social and cultural changes among adults affect children's activities, but do not affect their way of learning.

With these comparative data, both robust and vulnerable aspects of their way of life and behaviours will be pointed. Also the "learning model of hunter-gatherer children" will be shown in order to discuss the nature of "educational activities" by human beings.

Wednesday 26 June 2013
Lecture Theatre D

Energetics and Mechanics of Hunting and Gathering

Chair: Nathaniel J. Dominy

Session abstract

Anthropologists have long observed human hunting and gathering behaviours and focused on if and why they vary as a function of perceived costs and benefits. Resulting descriptions and interpretations of suboptimal foraging behaviours have been a source of contention and division. Yet relatively little attention has been paid to the underlying mechanics of how hunter-gatherers acquire and process food, or the physiological costs of these behaviours. As a result, it has been challenging to assess the antiquity and potential adaptive advantages of specific hunting and gathering behaviours. The goal of this session is to explore recent technical advances in respirometrics, imaging, and material science that have enabled field researchers to investigate the extent to which mechanical characteristics - both anatomical and behavioural - function to economize the energetic costs of hunting and gathering wild foods.

Geophytes on the Agulhas Plain: a foraging model

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Research indicates that human populations went through a dramatic bottleneck in a glacial stage called marine isotope stage 6 (195-125ka). Evidence suggests that the remaining population may have survived on/near the then exposed Agulhas continental shelf (on the south-western tip of Africa). The adjacent Agulhas Plain has a diverse and protein-rich shoreline and high diversity of geophytes (plants with underground storage organs- USOs). Geophytes in this region typically are predictably apparent to foragers year-round, and have high yields of complex carbohydrates. We hypothesize that geophytes could have offered high returns for hunter-gatherers. Our results show that there is very high variability of geophyte abundance over the Agulhas Plain, within and among the complex mosaic of vegetation types in the region. In comparison USOs available to modern hunter-gatherer communities (e.g. Hadza people of Tanzania), the USO biomass per hectare is lower. However, one can expect to collect 3.56 kg of USO material per hour, on average, on the Agulhas Plain. Most modern hunter-gatherer societies forage for tubers, which have relatively low starch (ca 3%) and high fibre (ca 15-20%) content. In contrast, our research shows that almost half of the edible species sampled on the Agulhas Plain possess corms (43/83 species), which have very high carbohydrate content (25%) and low fracture toughness (thus easily masticated). Furthermore, some of our corm-bearing species have up to 12% fat and 10% protein content. A foraging model of the hunter-gatherers of the Agulhas Plain (and elsewhere in the USO-rich Cape region) must account for a high abundance and diversity of small items of a nutritious resource that is available year round but shows high spatial variability.

Less famine in warm-climate hunter-gatherers: A challenge for thrifty genotypes and marginal habitats

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The 'thrifty genotype' hypothesis, which proposes that some individuals have the ability to store energy from calories in adipose tissue more efficiently than other individuals, is predicated on a belief that our hunter-gatherer ancestors experienced frequent periods of famine. If hunter-gatherers have always experienced periods of feast and famine, we should predict that they might have more famine than other modes of subsistence. Additionally, one common criticism of the use of ethnographically described hunter-gatherers (or foragers) as evolutionary models is that they occupy more marginal habitats than ancestral hunter-gatherers. If foragers were forced out of more productive lands by agriculturalists, we should certainly predict that they might have more famine than other subsistence strategies (particularly warm-climate agriculturalists). In this paper we explore two different assertions that both arrive at the same prediction—that hunter-gatherers should experience more famine than populations of other subsistence strategies. We compare all hunter-gatherers with all agriculturalists in the Standard Cross-Cultural Sample (SCCS) of 186 traditional societies. We find foragers do not have more frequent famine than agriculturalists. However, many of the forager societies documented in the SCCS are arctic foragers. Warm climate foragers are likely better models for understanding both the circumstances of most ancient humans and the conditions under which agriculture began, therefore we then limit our analysis to warm-climate hunter-gatherer societies (Effective Temperature $\geq 13^{\circ}\text{C}$). Across the eight variables pertaining to famine, we find warm-climate hunter-gatherers actually have the same or significantly less frequent famine than agricultural societies with the same climate.

Ranging costs and foraging strategies among Hadza hunter-gatherers

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The strategies that hunter-gatherers use to forage for food and other resources hold important implications for understanding our species' evolved ecology and for reconstructing foraging behavior in the archeological past. Measurements of the metabolic cost of walking and running have long shown that humans can maximize economy or speed during locomotion, but not both: the energy cost per kilometer traveled is lowest at slow to moderate walking speeds, but rises at faster walking speeds and during running.

We investigated walking speed and cost among Hadza hunter-gatherers to test whether speed or economy was maximized during foraging. We measured metabolic walking costs among Hadza hunter-gatherer adults using breath-by-breath respirometry, measured daily walking distances and speeds over a ten-day period using wearable GPS units. We found that walking cost for Hadza adults was similar to that of U.S. and European adults, with a minimum cost per kilometer at slow (~1.2 meter/second) walking speeds. However, during most forays, Hadza adults chose to walk at substantially faster speeds. Thus, while daily walking costs accounted for a substantial portion (mean: 6.7% for women, 11.0% for men) of their daily energy budget, Hadza foragers appear to favor speed over economy while foraging. This may reflect a strategy that maximizes encounter rates rather than minimizing travel costs as a means of improving net food energy return. We discuss the implications of these results for understanding hunter-gatherer foraging ecology.

Vertical climbing and the comparative energetics of honey hunting

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Rainforest hunter-gatherers around the globe seek and consume honeycomb and brood on a regular basis. Honey hunting offers substantial nutritional and social rewards within carbohydrate-depleted rainforest environments. Honey consumption generally reflects its abundance in the environment and is thus seasonally variable, and sometimes extreme. Optimal foraging models predict that opportunistic pursuit of honey can be advantageous, even at the expense of hunting and other activities. The costs of honey acquisition and their role in foraging decisions have received little attention, despite the fact that climbing tall trees in the pursuit of honey is dangerous, time-consuming, and energetically costly.

Here we present an analysis of cost of transport (COT) for vertical climbing bouts by Twa hunter-gatherers during honey acquisition using climbing speed data drawn from videos. Because the energetic cost of climbing is high compared to walking, climbing-related activities may exert strong influence on daily energy budgets for climbers, despite comprising a minor component of the daily activity budget. We evaluated this possibility using published data on hunter-gatherer activity budgets and portable respirometry data from the Twa for digging and walking. Our results indicate that climbing for honey represents a high, yet variable, source of energetic expenditure for men who climb frequently. In light of documented honey sharing practices among hunter-gatherers, these simple models suggest that targeted honey acquisition is governed by nutritional, energetic, and sociological factors.

Biomechanics and energetics of hunting and gathering in rainforests

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Longer legs reduce the energetic cost of human walking except when physical impediments necessitate frequent flexion of the trunk and hip. Dense habitats are therefore expected to favor short statures or disproportionately short hindlimbs, and authors have long viewed the human pygmy phenotype as an adaptation to hunting and gathering in rainforest habitats (Hiernaux 1977, Turnbull 1986, Diamond 1991). This idea, termed the mobility hypothesis (Perry and Dominy 2009), has the advantage of being intuitive, but quantitative data on the density of rainforests or the mechanics of human movement in these habitats are sparse.

Here we report on the density of understory vegetation in 15 tropical rainforests, including sites inhabited by hunter-gatherers. In addition, we report on a field experiment with Twa hunter-gatherers that tests a central prediction of the mobility hypothesis. We found that the frequency of trunk flexion was significantly greater at all angles for taller Twa, indicating that smaller individuals have a mechanical advantage when walking through the Bwindi Impenetrable Forest of Uganda. It follows from these findings that smaller Twa also have a lower energetic cost of transport when walking through the dense forest understory, although this prediction has not been verified. Taken together, our results agree well with the predictions of the mobility hypothesis.

The overall energy gain of Twa tuber foraging

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Much attention has been paid to the role of specific food resources, such as meat and underground storage organs (USOs), over the course of human evolution. Debate on the importance of these foods is based in part on estimates of their energetic value, yet the energetic costs of discrete foraging behaviors are seldom measured. The net energetic value of a food must account for the sum energetic costs of acquisition, processing, digestion and the energy loss to intestinal bacteria. Certain steps in this chain of energy assimilation can only be estimated under laboratory conditions. However the energetics of acquisition and external processing, arguably the two most important variables for calculating energy balance, are realistically quantifiable in the field.

Here we report on attempts to quantify the energetic expenditure of a discrete foraging activity. We focus on wild tubers (yams) and calculate the energy gain of Twa women foraging in the Bwindi Impenetrable Forest, Uganda. We used a portable respirometer to measure the energetic expenditure of searching and digging and we recorded Twa-specific roasting behaviors, including measures of cooking time and temperature. We found that the starch content of roasted yams is comparable to those of domesticated tubers and high compared to tubers consumed by other hunter-gatherers, such as the Hadza. After combining nutritional analyses of collected samples with measured energy expenditure, we conclude that Dioscoraceous tubers yield a significantly high return on energy expended in production, particularly in light of the low variance associated with foraged plant foods.

Nutritional impact of cooking Hadza tubers

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The development of cooking is hailed as a revolutionizing strategy for increasing calorie acquisition in foods. Its adoption by human ancestors may have facilitated reduced selection on robust or specialized dietary adaptations to the extent that modern humans are now nutritionally reliant on cooking as a form of food processing.

To investigate the value of cooking, we examined the Hadza practice of brief, five-minute fire roasting on the wild tubers they consume year round. Earlier work has shown that this duration of roasting is not sufficient to fully gelatinize tuber starch. In this study, we observed the effects of roasting on digestive efficacy of Hadza tubers using an in-vitro model of the human gut. The TIM-1 system was used to simulate digestion in the stomach, duodenum, jejunum, and ileum, which comprise the upper digestive tract in humans. Using this model, we examined the absorption efficiency of processed tubers to assess bioavailability of nutrients. The TIM-2 system simulated the function of the colon in fermenting indigestible carbohydrates using a seeded microbial population from Hadza and "western" human faecal samples. Fibrous foods native to the Hadza diet were fermented by these two microbial populations in order to examine the metabolic activity through metabolite production. We used these data to assess whether or not Hadza tuber roasting confers nutritional advantages through the increase of nutrient bioavailability in-vitro and how this may be extrapolated to the understanding of early human dietary ecology.

Investigating genetic signals of paracultivation in wild yams harvested by the Baka of Cameroon

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Wild yams (*Dioscorea* spp.) are a key food resource for rainforest hunter-gatherers in Africa and Asia. The tubers of these species, which are rich in starch, are the focus of the so-called “wild yam question”, which questions the feasibility of a purely hunting and gathering lifestyle in tropical rainforests with limited starch resources. Until now, the debate has been informed almost entirely by measures of the abundance, distribution, and caloric potential of yams in various locations. However, the reciprocal effects of human harvesting and paracultivation practices (Dounias, 2001) on wild yams remain little studied, despite their potential relevance for inferring long-term human consumption.

Genetic techniques may be especially useful for examining such anthropogenic effects, which may be manifested in the population genetics of wild yams that are subject to human harvesting or signatures of selection in genes associated with human-desired traits such as high starch concentration.

Here we present data on the diversity, phylogenetics, and human use of wild yams that are sympatric with the Baka hunter-gatherers of southeast Cameroon. In addition, we discuss the genetics of a population of a single wild yam species, *Dioscorea praehensilis*, which is a preferred and important food for Baka hunter-gatherers living in Cameroon. Our results confirm ethnographic reports about Baka paracultivation practices on wild yams and demonstrate the utility of genetic tools for investigating coevolution between humans and an important plant genus.

Wednesday 26th June 2013

Lecture Theatre D

Hunter-gatherers and language of perception

Chairs: Niclas Burenhult and Asifa Majid

Session abstract

Recent years have seen an awakening of interest in how sensory experiences are encoded in languages. Hunter-gatherer communities are particularly interesting in this regard as it has been claimed that, in comparison to industrialised communities, hunter-gatherers are likely to have less developed color naming systems (due to the lack of dyeing technologies) but are more likely to have elaborate smell lexica (due to hunting practices).

This session explores the myriad linguistic resources, and concomitant cultural practices, contemporary hunting-gathering peoples utilise in communicating their sensorial worlds.

Eating in the forest: Semaq Beri verbs of ingestion

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The Semaq Beri of Peninsular Malaysia are the only Southern Aslian-speaking group to have engaged in mobile hunter-gathering in modern times. Occupying a very different ecological niche to their Southern relatives, and living alongside Semang neighbours, the Semaq Beri exhibit significant variation with respect to social organization, cosmological beliefs, and classification of the natural world.

Recent research suggests that their linguistic choices may be influenced by their forager adaptation. In Semaq Beri there is no generic verb equivalent to 'eat', and speakers must instead choose from several monolexemic verbs. The selection of the verb is determined in relation to the classification of foodstuffs. The relationship between Semaq Beri verbs of ingestion and classification of food was first noted by (Kuchikura 1986), and forms one component of a complex system based around the procurement of food, its preparation and consumption.

To what extent is this lexicalization pattern determined by the Semaq Beris' forager orientation? While the absence of a generic verb 'eat' does not appear to be a feature in the languages of all Aslian forager groups, it is entirely absent among those Aslian groups who engage in alternate modes of adaptation. I will present materials from related Aslian languages that suggest that there may be a correlation between this particular lexicalization pattern and a hunter-gatherer adaptation.

Reference

Kuchikura, Yukio. 1986. Subsistence ecology of a Semaq Beri community, hunter-gatherers of Peninsula Malaysia. Ph.D. dissertation, University of Tokyo, Tokyo.

An animal is a part of the whole imagined by us: analysis through whole-part relationship in Mlabri in northern Thailand

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Mlabri language, which is an endangered language spoken by Mlabri people who live in the northern Thailand, has a particle ?ak, which seems to be derived from the first dual pronoun ?ah. According to my observation, Mlabri speakers would be likely to employ the particle for describing "whole-part relationship".

It seems to be that the "part of the whole" is shown by the particle, on the other hand, what is the "whole" depends on the context and the common knowledge among the community. The purpose of this paper is to explore a question: what do they think is the whole when the particle is used with nouns for animals?

It can be concluded that when they refer to animals with the particle, the whole may be the human society, because ?ak can be only used with animals hunted by people or domestic animals, and, on the one hand, wild animals

Language of perception and its relation to ethnobiological knowledge among the Maniq of Thailand

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Previous investigations into sensory language reveal that certain perceptual domains may be universally ineffable or, in contrast, conditioned by a range of socio-cultural and ecological factors. The present study examines the perceptual language among the hunting-gathering Maniq of Thailand, and evaluates the validity of past research, focusing in particular on the linguistic categories reflecting the close relationship of the group with the biological world. Data reveal great elaboration of the sensory lexicon in a number of domains, including smell, color and pattern.

The Maniq possess a large set of terms dedicated to describing olfactory impressions, which is unparalleled in contemporary Western languages. Importantly, these words are abstract and form part of everyday language embedded in the surrounding natural world. What is more, they are inextricably linked with the Maniq belief system and indigenous practices.

All in all, we see a large number of linguistic categories which reflect the expert ethnobiological knowledge and sensitivity to discontinuities in nature possibly connected to the hunting-gathering subsistence system, e.g. *kadiet* 'to be striped crosswise', *cawãc* 'to be striped lengthwise', *kam_h* 'to stink (of a millipede)', *tala_* 'to be red (of ripe fruit)'. Linguistic and cultural elaboration of perception suggest that the Maniq setting provides an excellent background for developing rich sensorial distinctions across a number of domains, including those where no elaboration would be expected. These data shed new light on sensory language in general, as well as on how it may be influenced by extralinguistic factors.

The olfactory lexicon in Seri: What does it mean for your spirit to smell?

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Recent work (Wnuk & Majid 2012, Burenhult & Majid 2011) has focused on questioning the prevalent belief that the olfactory senses and their associated language are universally impoverished. The present work further questions these beliefs by presenting data from the Seri language, an isolate spoken in north-western Mexico by a traditionally semi-nomadic hunter-gatherer group of around 1,000 people.

In Seri we find a rich olfactory vocabulary, in particular as it pertains to smells which could best be translated as 'stink' in English. These verbal predicates that refer to unpleasant smells, as well as a general smell predicate, are found in other expressions, particularly in the names of plants, insects and animals, as well as in some expressions describing psychological states like *iisax cheemt* 'be angry' (lit. its spirit stinks) or *ihim cheemt* 'have nightmare'

(lit. its dream stinks).

This work describes the Seri olfactory lexicon, including both the basic verbal predicates as well as complex expressions that contain deverbal forms. To put this lexicon in a cultural context, I present a discussion of material artifacts, in particular the former use of a quonset-shaped shelter and a drying pole (oftentimes attached to the shelter), used to dry fish and other meat (Schindler 1981), which are potentially related to the lexical content of certain smell terms. I also briefly discuss synchronic uses of smell terms, given the presence of Mexican perfume and scented cleaning products currently in use in the Seri community.

Color systems in comparison: “Pygmy” hunter-gatherers and Bantu farmers

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Do hunter-gatherers express sensory perception differently than, for instance, farming societies? In this paper, I investigate color words and color perception in the “Pygmy” hunter-gatherer (PHG) language *Gyeli* of Cameroon and compare them with two neighboring farming languages, *Mabi* and *Bulu*. I show that PHG and farming communities differ substantially in several ways: (i) the inventory of color categories, (ii) the distribution of color space, (iii) individual variability in color naming, and, (iv) in the way new colors enter the languages via borrowing.

Gyeli and the farmers' languages are closely related and in intense contact with one another. Nevertheless, data that I collected in the field reveal that the two farming communities dispose of more color categories than the PHGs. PHGs retain a more conservative color system where traditional color categories (*black*, *red*, and *white*) receive a larger extension in the color space while in the farming communities newly innovated color categories (*yellow* and *green*) get a larger extension.

Also, PHGs display comparatively a higher individual variability in the way they talk about colors. Both the use of color words and the extension of a color category are less conventionalized among individuals.

Beyond these diagnostics, PHG and farming communities display distinct patterns of borrowing new colors.

While PHGs borrow the use of a color word from neighboring farmers' languages first before they extend the category, the two farming communities first borrow a color concept from the colonial language French and then search for a vernacular word for the new color.

Thursday 27 June 2013
Lecture Theatre A

**Hunter-gatherers behavioural resilience: Life history,
behavioural ecology, cooperative behaviour and cultural
evolution**

Chair: Andrea Migliano

Session abstract

Hunting and gathering have been the major occupation of humans since *Homo sapiens* emerged. Although it has been the longest and most diverse bio-cultural adaptation in humanity's existence, we know very little about the ways in which hunter-gatherers have adapted to pressures and maintained their resilience. Resilience ultimately lies in their capacity of adaptation to an ever changing environment.

We invite scholars using behavioural economics, life history theory, theories of cooperation and cultural transmission to explore how variation in life history traits (age at reproduction, inter-birth intervals menopause and others), kin selection, mate systems, cooperative behaviour (cooperative breeding, cooperative hunting, food sharing, among others) as well as behavioural economics and cultural evolution, differentially contribute to hunter-gatherer past, present and future resilience.

Topics: life history – behavioural ecology - cooperation – cooperative breeding – cooperative hunting- food sharing- kin selection- evolution of cultural behaviour- cultural evolution.

Evolution and maintenance of food sharing in hunter-gatherers

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Food sharing is common amongst hunter gatherer groups, where all individuals can share the spoils of a hunt whether or not they participated in hunting themselves. In the short term this is costly for successful hunters and potentially open to exploitation by cheats – individuals who consistently do not hunt. It has been suggested that punishment is required to maintain cooperative food sharing, but hunter-gatherer groups rarely punish individuals who do not contribute food to the group. Additionally, in this context group membership is constantly changing and unlikely to be made up of extended kin, therefore kin and group selection effects are not likely to be enough to maintain food sharing. Using agent based models of daily hunting, sharing, births, deaths and movement we investigated the effect of different movement strategies (no movement, movement at random (of various amounts) and movement based on rational decisions about net energy income) on the maintenance of cooperation and population survival in the presence of cheats. We also extended the model to include storage and to systematically vary the predictability of the environment to investigate the effect of a more agricultural lifestyle on cooperative food sharing.

Investigating ecological hunter-gatherer resilience using simulation modelling

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As modern humans expanded out of Africa they encountered an increasingly diverse range of habitats and climates, which contributed to shaping the phenotypic diversity of our species. One of the genomic regions showing a strong signal of positive selection contains the ectodysplasin receptor gene (*EDAR*), known to be involved in ectodermal development, including hair follicles, teeth, sweat, salivary and mammary glands. *EDAR* harbours a non-synonymous mutation, *EDARV370A*, identified as the target of selection. This allele is observed at high frequency in East Asian and Native American populations, but is rare or absent elsewhere. While the selective pressure on this allele is still a matter of debate, it has been estimated to originate prior to 10,000 years ago, a time when it may have been favoured in a periodically colder and dryer environment. We have used a spatially explicit forward in time simulation model coupled with an approximate Bayesian computation framework to (1) investigate the timing and location of the start of selection on this allele and (2) evaluate alternative evolutionary hypotheses. Simulations start 40,000 years ago and account for the independent beginning of farming in distinct locations. Interactions between hunter-gatherers and farmers include gene-flows, cultural diffusion and demographic growth with density-dependent competition. The results suggest the *EDARV370A* allele originated in Northeast China before 30,000 years ago, a time that is early in the settlement of Asia by modern humans. Furthermore, a scenario in which natural selection has not been constant over space seems more likely than constant selection.

Explaining how hunter-gatherer cumulative culture can reduce ecological risk using agent-based simulation models

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All hunter-gatherer populations have to cope with risk, defined as unpredictable variation in the outcome of behaviour, and uncertainty, defined as incomplete knowledge about their physical and social environment. It has been suggested that the human ability for cumulative culture is one of the main adaptive mechanisms for risk-buffering in humans. One implication is that the level of risk that different hunter-gatherer societies face should influence their level of cumulative adaptive culture. Empirical studies indicate that the extent to which environmental risk affects cumulative culture in different hunter-gatherer populations depends on the scale of risk differences between populations.

Here we use a novel agent-based simulation approach to investigate the potential role of spatial and temporal risk in the evolution of cumulative adaptive culture in hunter-gatherer societies. We explore under which conditions cumulative adaptive culture increases the resilience of hunter-gatherer populations to environmental risk. Further, we examine at which scale risk differences between populations become important relative to other factors in the evolution of cumulative adaptive culture. We compare our results to data on prehistoric hunter-gatherer populations and their environments. We conclude with a general discussion of the potential of agent-based modelling as a complementary approach in modern hunter-gatherer studies.

Estimation of hunter-gatherer survival trajectories from incomplete census data

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Hunter-gatherer populations have supplied key data for evolutionary studies of human longevity, reproduction and morphology. However, they currently face an increasing risk of acculturation, absorption and extinction. With data from hunter-gatherers typically coming from small and decreasing populations, analytical alternatives are urgently needed. Here we present a new framework for the analysis of limited and incomplete census data that allows estimation of survival and mortality curves even when sample sizes are below 100 individuals. Relying on available data from the Ache, Agta and !Kung groups; we also exemplify how the effect of covariates such as sex, birth order and presence of family members in the household can be incorporated into survival analysis. We conclude that estimation of survival trajectories without the use of model life tables is the ideal alternative to calculation of population-specific demographic parameters from hunter-gatherer populations.

Dental eruption in Baka pygmies

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It is largely assumed that reduced adult size in African tropical populations called 'Pygmies' is the result of a deficiency in the growth hormone - insulin-like factor 1 axis. However, how and at what period(s) this deficiency acts during ontogeny in order to determine the characteristic traits of 'pygmy' phenotype is completely unknown. Several processes were advanced as explanations, for instance Bailey suggested that new-born pygmies are smaller and this difference is maintained during post-natal growth; more recently it was proposed that growth process stops at an earlier age suggesting a precocious growth in populations with reduced adult-size. Bailey based his results in individuals of known-chronological ages from 0 to 5 years; growth process in later periods cannot be determined due to the lack of chronology.

Dental growth shows a strong relationship with sexual and somatic maturation. Its strong genetic basis and the isolation of tooth formation from environmental stress suggest that dental growth is a good proxy to understand growth and development. Eruption of permanent molars is largely used by several NGOs to estimate individual age and to distribute identity cards to individuals from traditional societies. This procedure is based on the assumption that dental growth presents the same chronology in all modern human populations. However, the same chronology in dental growth between populations showing distinct phenotypes resulting by particular growth process has to be demonstrated. Indeed, the use in pygmies groups of dental growth standards established in non-pygmies populations is completely misleading. It is necessary to establish dental growth standards on data collected from each population.

The aim of our work is to establish the age of first and second molar age eruption in Baka, a pygmy group inhabiting Cameroon, Congo and Central African Republic. Our hypothesis is that age of molars eruption is advanced in Baka in relation to non-pygmies populations. If the hypothesis is not rejected, our results would suggest precocity in dental

maturation that can be in turn suggesting an earlier stop of growth and development in individual.

The establishment of dental chronology can only be carried out in individuals with well-known chronology. Knowing age is crucial to undergo any serious study on growth and development. After some years of prospection, we have localized a mission in South East Cameroon where nuns have recorded birthday of around 800 Baka individuals from 1987 to now. We started our study in 2007 and visited this locality every year considering that one-year interval between observations is an appropriated period of time to follow changes in dental growth. The state of eruption of molars is determined from the inspection of oral cavity in each individual. For each tooth, we record if the tooth is absent (1), or if it is at any stage of eruption, it means from emergence to attainment of occlusal plane (2) or if it is already in occlusion (3). In order to assess the age of emergence of each molar, cumulative distribution curves will be used, i.e. percentage of children who have reached or passed a stage, in our case 'occlusion', plotted against age groups in months or years. It enables to obtain a S-shaped curve for each tooth class recording 0% of children in the youngest age group having the tooth in occlusion, up to 100% of children in the oldest age group having the tooth in occlusion. Probit analysis will be performed to derive the mean age and range at which 50% of the children are most likely to have a tooth in occlusion. Probit analysis involves transforming the cumulative percentages to standard deviation units and fitting these to a straight line, the slope of which indicates the standard deviation of the mean.

Our results show that the first molar is in eruption around 5 years of age and the second molar around 10 years of age. Girls are a little more advanced than boys. When these values are compared to age of eruption in non-pygmies populations, Baka display an important precocity, the first molar is advanced by one year and the second molar by two years. The use of non-pygmies standards would lead to overestimate individual age. Therefore, the null hypothesis cannot be rejected. The earlier molar eruption in Baka can suggest that growth process were probably shortened and thus Baka phenotype would result from precocious growth.

Foraging reputation among the Hadza: some hypothesis tests

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Evolutionary anthropologists have extensively debated the role of hunting in human evolution. If men hunt primarily to signal their phenotypic quality to potential mates, we should expect that better hunters may have more wives and possibly more children. If, on the other hand, men hunt primarily to provision their families, we might expect better hunters have no more wives than worse hunters, but more children born or surviving per wife than worse hunters. Also, women's foraging may have much stronger association with their own reproductive success than their husband's, whether he is a good hunter or not. Here we investigate how foraging reputation among the Hadza may or may not be associated with their fertility, the survivorship of their offspring, or their spouse's foraging reputation. We test whether Hadza men's foraging reputation or Hadza women's foraging reputation is a better predictor of fertility and survivorship. Finally we discuss the implications of these results for the evolution of the sexual division of foraging labour.

Religion among foragers

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Religiosity is unique to humans. It probably evolved before the appearance of the first modern human foragers. This paper identifies the most basic and probably oldest aspects of religiosity by focusing on the religion of foragers using data from original ethnographic sources and additional data from the Standard Cross-Cultural Sample. We suggest that it is logical to infer that religion began very simply and became more complex with time. Among forager religions there is great variation in type and combination of religious traits. Prior research has shown that foragers are the least likely to have active or morally punishing creator gods. The magico-religious behaviours of some of the more complex foragers includes high gods, shamans, witches, sorcerers, belief in an afterlife, and rituals that rise to the level of religion among agriculturalists. In contrast, some warm climate foragers appear to have a strikingly simple religion compared to other foragers, one that generally consists of a cosmology or worldview of how life came to be and a communal ritual that heals dissension in the group. They have no high god, no shaman, no religious specialists, and no belief in an afterlife. With special attention to these simple foragers, this paper will dissect and compare the elements of forager religion and their relationship to human evolution. We propose an outline of the most basic aspects of nascent religiosity – some of which may have first appeared in the early Pleistocene.

Egalitarianism across hunter-gatherers: a statistical analysis

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I analyse how much human hierarchies vary across subsistence modes and show that simple foragers are by far the most egalitarian. I then test several hypotheses to see which are the best predictors of forager egalitarianism. The best predictors are mobility and multilocal residence, hunting (especially of large game), central place provisioning, the ability to quickly form fluid coalitions, and the use of deadly weapons, especially projectile weapons. Most of these variables map onto the difference between simple vs. complex foragers. The distinction between immediate and delayed return foraging, as proposed by Woodburn, is also a useful heuristic.

The evolution of egalitarian societies

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Many hunter-gatherer societies have egalitarian social arrangements, but there is contention over the degree to which these are distinctive hunter-gatherer traits, and why they might have evolved. We review the evidence for egalitarianism among hunter-gatherers in the ethnographic and archaeological record, and consider some explanations. The hypotheses include (a) an adaptation to ecological settings that make collaboration in hunting obligatory and food storage impossible, (b) a resilient egalitarian ethos, and (c) kin selection favouring cooperation in small populations. The methodological approaches that have given rise to these hypotheses include ethnology, economic games, and agent-based models. Insights from the Hunter Gatherer Resilience project suggest how these approaches could be combined to evaluate the rival hypotheses.

Thursday 27 June 2013

Lecture Theatre B

Hunter-gatherers and their neighbours (Part 1)

Chair: Kazunobu Ikeya

Session abstract

Hunter-gatherer interactions with neighboring agricultural, pastoral, and urban societies have been an important and longstanding theme in anthropology. Numerous studies have examined exchange and trade relationships, consignment relationships (e.g. offering labor), and intermarriage relationships. Historical approaches have been commonly and effectively used for reconstructing recent interactions. During the last century of the colonial to post-colonial period, some hunter-gatherers have also become farmers, herders, and migrant laborers. This session will present examination of how hunter-gatherer societies co-exist with neighbors and remain resilient despite the many changes posed by the environment, land use, market economy, and government policies. Ethno-historical and eco-historical approaches will be emphasized. Then situations in Africa and Asia will be compared.

Hunter-gatherers, herders, agropastoralists, and farm workers: Hai//om and Ju/'Hoansi San and their neighbors in Namibia in the 20th and 21st centuries

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The history of the Hai//om and the Ju/'hoansi San over the past century in Namibia has been one of constant challenges — by the state, the environments in which they live, and by their San and non-San neighbors. Both Hai//om and Ju/'hoansi experienced removals from their ancestral lands. Land loss was a result of the setting aside of commercial freehold farms for whites by the colonial governments (both German and South African), the declaration of areas as game reserves and national parks (Etosha, Khaudum), and, after independence in 1990, the establishment of resettlement programs by the Namibian government.

After an investigation conducted by a two-person team (the Commission for the Preservation of the Bushmen), carried out between 1949 and 1953, it was decided not to have two "Bushman Reserves" for the Hai//om and the Ju/'hoansi, but only one, that of "Bushmanland" which was set aside for the Ju/'hoansi. In 1953-54, sizable numbers of Hai//om were involuntarily relocated out of Etosha National Park. Many Hai//om became landless laborers on white farms where they had not security of tenure. Today, the Hai//om, the largest and most widely distributed of the San of Namibia, are largely landless. Some progress has been made, however, in recent years (2007-present) in providing some commercial farms for Hai//om settlement by the San Development Office of the Office of the Deputy Prime Minister. The Hai//om resettlement farms, which are adjacent to Etosha National Park, are in the process of being occupied. There are other groups, including Herero and whites, who own some of the neighboring farms. As it turns out, both the Herero and the whites have provided assistance to the Hai//om on the resettlement farms.

In the case of the Ju/'hoansi, who experienced what they saw as an invasion of their land by 32 Herero with 1,300 head of cattle in April, 2009, relations between the groups have not been as cordial. In mid-March, 2012, the Regional Governor of Otjozondjupa asked Tsamkxao =Oma, the Ju/'hoan Traditional Authority, if he would allocate a portion of

the Nyae Nyae Conservancy to the Herero for grazing purposes. He did not do so, and the land and grazing issues are still unresolved.

This paper explores the relationships between the Hai//om and their neighbors in the Etosha area, and between the Ju/'hoansi and their Herero neighbors in the Tsumkwe area, with particular reference to the period from 2009 to the present. The roles of the Traditional Authorities of the Hai//om and the Ju/'hoansi are examined, as are those of the regional administrations of Kunene (Hai//om) and Otjozondjupa (Ju/'hoansi) and the government of the Republic of Namibia. Resolution of some of the outstanding issues on land, resources, and governance in communal and commercial areas of Namibia by the government, local authorities, and the peoples themselves will go a long way toward enhancing the well-being of the Hai//om, the Ju/'hoansi, and their neighbors.

Making incomprehensible relations comprehensible: The Guahibo hunter-gatherers and their farming neighbors in 17th Century Llanos

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Earlier representations of hunter gatherer – farmer relations in the lowland South American anthropological literature have over-generalized and distorted a very dynamic relationship, removing the context in which interactions between nomads and farmers took place. During the 16th century, the Colombian and Venezuelan Llanos was the scene for the clash of societies. The historical record shows a frontier in which Caribs' expansion, with the help of the Dutch, forced sedentary communities (i.e., Saliva and Achagua) to relocate. At this time, a movement of settlements is also evident from East to West. This way, communities got closer and closer to the Jesuit missionaries who, in the name of Spain, attempted to re-structure settlement patterns. The decomposition of the pre-Colombian network of alliances and trade system is evident at that time. The *quiripa*, a shell used as a currency between societies, soon became a rare commodity that also lost its significance. It is in this context that the following observation is especially relevant. The Jesuit missionaries were puzzled by the interactions between Guahibo hunter-gatherers and farmers. The farmers tolerated, even welcomed, the Guahibo into their towns, even though they “abused” and “tricked” the farmers at every turn. This seemingly incomprehensible relationship can be rendered comprehensible once recognized that the Guahibo offered more than goods to farmers. They provided a critical resource in this socially and politically changing landscape: information. The goal of this paper is to evaluate this hypothesis based on an analysis of ethnohistorical data.

Raute Nepalese monkey hunters and their changing relations with the outside world

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In the western part of Nepal there is a people called the Raute, who practice a nomadic lifestyle of hunting and gathering in the forest. The men hunt monkeys, and the women collect wild plants. The men also make vessels and other wooden items from trees cut in the forest, and exchange them with farmers for rice and other crops.

In the presentation we describe the rapid changes of their lives and relations with the outside world in recent years and analyze the social background of those changes. In 1996 a Maoist group began fighting against the government, declaring the equality of minorities such as indigenous peoples, lower castes, and women. After 10 years of battle, they reached a peace agreement and the Maoist party joined the government. Through the influence of these developments small ethnic groups such as the Raute came to form a single political group, and the Raute became famous as "the last hunters of Nepal", which is one of the factors of the changes.

Acculturation or continuity? The adoption of marriage payments among the Punan Tubu (Indonesia)

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In north-eastern Kalimantan, part of Indonesian Borneo, the Punan families of the Tubu river have been largely influenced by their farming and settled neighbours, first in their participation in the forest products trade, then in the process towards a sedentary lifestyle in the vicinity of the large rivers. One significant influence is the gradual shift in less than one century from a matrimonial compensation between spouse's parents to a complex system of matrimonial payments of distributed (or redistributed) types between families in various villages.

How have the Punan Tubu remained themselves despite the major changes of the past century and the successive cultural borrowings from their neighbours? More precisely, how the Punan have integrated the effects of the trade in forest products and - until recently - succeed to maintain fair matrimonial payments between families?

Attention will be given to the relationships between Punan families and between the Punan and their neighbours, through trade, but mainly through marriage and the use of payments and counter-payments in matrimonial alliances. Throughout a historical reconstruction of the evolution of marriage, of its borrowings and of its exchange rules, it will be a matter of knowing whether the Punan have shift from a system of social relations based on sharing towards more or less reciprocal relationships, or whether their social and economic relationships have always been based on reciprocity.

The political implications of forager-farmer interactions in peninsular Malaysia

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The meaning of forager-farmer interaction has occupied anthropologists in recent decades. One of the most prevailing views on this subject, that hunter-gatherers are economically dependent on and politically subordinated to neighboring farmers, is not only contentious, but also inadequate in accounting for the context and outcome of Semang foragers' trade with farmers in Peninsular Malaysia. This view contradicts these foragers' perception of trade, their intentions in trading, as well as the political implications of their trade with Malays.

Lanoh, members of a Semang group in Peninsular Malaysia, do not perceive trade as a desperate economic measure or a secondary activity, less meaningful than hunting. Instead, they take pride in their knowledge of the forest and forest products, and trade figures importantly in their identity as people. This is especially evident when expressing a desire to protect this realm from intruders, including, and especially, Malays. This suggests a so far largely unexplored meaning of trade for foragers, like Semang.

Apart from being a means to supplement their diet and tool kit, trading with their farming neighbors may have played an important role in boundary maintenance – in these foragers' ability to sustain their political autonomy and cultural identity throughout the centuries of interacting with more powerful farmers. As opposed to essentializing hunter-gatherers, or invariably portraying them as victims of forces beyond their control, this interpretation underscores that they are political players who have employed various strategies to negotiate their complex ecological context of which neighboring non-hunter-gatherers have long comprised an inescapable part.

The current interaction with neighbours: A comparison of the Sandawe and the Hadza in Tanzania

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In the central highland in Tanzania, there are two ethnic groups of hunter-gatherers: the Sandawe and the Hadza. Both of their settlement areas have common characteristics: they are semi-arid with erratic rainfall and are home to many ethnic groups. However, the current situations of these two groups are different.

I have conducted my research on the livelihood and natural resource use among the Sandawe since 2003. The Sandawe are regarded as former bush foragers who practiced hunting and gathering until the middle of the nineteenth century. They are sometimes described by their neighbours as bush people or hunters. However, they learned cultivation and livestock keeping from their neighbours and now are mostly engaged in agriculture, which is supplemented by other activities such as hunting, gathering, and livestock keeping. My research has revealed that despite their complex livelihood practices, many aspects of their lives are strongly influenced by their agricultural practices. Moreover the Sandawe often cooperate among themselves in order to sustain their subsistence economy. On their food production, for example, each household grow different crops and they can exchange those crops each other.

The Hadza, on the other hand, continue hunting and gathering for their subsistence, and now some of them are involved in cultural tourism. They are seemed to earn their livelihood from many sources by using their relationships with several neighbours such as agriculturalists, pastoralists and tour guides and guests.

This presentation will focus on the relationship between the Sandawe and the others. Furthermore I will try to compare it with the Hadza case to understand how multiple relationships between hunter-gatherers and neighbours are built today.

Culture contact between the Evenki and their neighbors as situations of non-communication

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In this presentation I would like to describe how egalitarian Evenki hunters in East Siberia establish economic, social and cultural contacts with their hierarchical neighbors, such as Russians, Buryats and Chinese. These contacts have been existing for centuries and although they all take form of exchanges based on hierarchical modes of action, with a result of supporting existing hierarchies in which Evenki are positioned at the bottom of the local society, these contacts still are not disintegrating the Evenki community, but to the contrary help them to maintain as an isolated and independent group. This is amazing because Evenki stay as a minority and cannot avoid contacts with other people in all the spheres of their lives (economic, social (especially education and medical treatment) or political).

I propose to apply the concept of "culture contact", developed by Gregory Bateson and plan to show how contacts between Evenki and their neighbors evolve in the situations of non-communication. In these situations parties block the exchange of messages about their lives and personal details, but keep it on the level of formal and stereotyped gestures, that support existing prejudices. I propose to look at the secrets that Evenki are believed to have and keep from other people and look at how these secrets work as such blocks in communication process. These break-downs in communication turn to be satisfying for all participants and make the contacts between hunter-gatherers and other people smooth and un-influential.

Forest people in the modern world: Recent social changes of the Babongo in southern Gabon

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The forest people, or Pygmies, who live a nomadic hunter-gatherer lifestyle in the tropical rainforests of central Africa, have experienced considerable social changes in the last several decades. Since the mid-twentieth century, many have been living sedentarily along the road as they practice agriculture in their own fields. Modern state systems have infiltrated their societies, and modern facilities have become more accessible. Since the 1970s, foreign companies have continuously exploited natural resources, and contacts with market economies have increased. On the other hand, conservation programs have been implemented in local communities and have influenced the Pygmies' land use patterns and daily activities. While the processes involving social changes are more advanced, many scholars have emphasized the negative aspects and difficulties faced by the Pygmies and are concerned that the forest people are experiencing more marginalization in the modern world. Symbiotic interethnic relations between the Pygmies and their neighboring farmers have also shown changes, making discrimination from farmers more clear.

However, according to my intensive field studies, a different situation has been observed among the Babongo Pygmies in southern Gabon. In this study, I demonstrate the Babongos' flexible adaptation to the modern system and their relationships with neighbors, which have been progressing toward relative equality. I illustrate historical changes in intermarriages and the land use patterns of the Babongo and describe their recent social status, focusing on mobile phone use, healing rituals and practices, connections with the town, and the representation of their neighbors.

Various aspects of interactions between Baka hunter-gatherers and migrant merchants in southeastern Cameroon

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In south-eastern Cameroon, Baka Pygmies and their neighboring farmers have been facing at the continuous pressure of market economy since 1950s. After the sedentarization and agriculturalization, cash became to circulate everywhere led by the repeated penetration of commercial logging operations since 1970s. The Baka and neighboring farmers are involved in these waves. Cacao farming is widely spread in this region and practiced by local peoples including the Baka hunter-gatherers. Cacao is a perennial tree crop and so cacao plantations became a property for the Baka. Cacao cultivation has provided them with direct access to a market economy without mediation and control by neighboring farmers, which gives the Baka autonomy in the local society. At the same time, considerable economic inequality has emerged among Baka individuals, causing a conflict between self-interest (economic gain) and existing egalitarian ethics.

It seems quite difficult to keep and develop "wealth", with maintaining the psychosocial principles of egalitarianism. But the fact is that many Baka of the region have been developing their own cacao plantations for more than 3 decades over generations. At the same time, some of them have also continued to practice long term hunting and gathering camps in the forest periodically up to today: they are trying and struggling to adapt to market economy without losing hunting and gathering life.

This paper describes and analyses new relationships between Baka hunter-gatherers and migrant merchants who play multiple roles in commoditization of local economy and Baka autonomy from their traditional patrons of neighboring farming society.

The impact of hunter-food producing society relations on the Ainu's subsistence

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Until recently it has been commonly assumed that the Ainu freely hunted, fished, gathered, and conducted small-scale farming throughout Hokkaido. It is true that fishing and hunting provided a significant component of Ainu diet until after the Meiji Restoration when the Colonial Department banned salmon fishing and restricted deer hunting respectively in the 1870s with the intention of restoring these resources. Some Ainu petitioned the government for the continuation of deer hunting with the use of spring-bows and poisoned arrows in order to supplement their daily diet. However, arguments that depart from this conventional hunter-gatherer model have been raised as a revision of Ainu subsistence practices. Some scholars insist that the Ainu were forced into providing labor at fishing grounds, while others argue that the Ainu of Hokkaido were in direct contact with food producing societies to the south and north to obtain various foreign commodities including food.

At several Ainu sites recently excavated in the central part of Hokkaido, numerous graves were built before and after a layer of volcanic ash referred to as *Tarumai B* deposited in AD 1667. From the cultural layers above this ash, knives, flints, pipes, igniting metal, and lacquered ware were discovered. No hoe-heads, swords, or iron pots have been found. Some documentary evidence exists indicating that the Ainu were forbidden to have grain and farming tools by the feudal Matsumae clan. On the grounds of this evidence, it has been widely accepted that Ainu farming once flourished, but was later prohibited in the latter half of the 17th century by the local government. Both an increase in the excavation of Ainu sites possessing large ridged fields that are thought to be from the 18-19th centuries and re-examination of documentary evidence listing species of prohibited grain seem to contradict this assumption. The purpose of this presentation is to review previous arguments on subsistence of the Ainu and to evaluate to what extent the Ainu engaged in farming or hunting.

Historical changes of the relationship between hunter-gatherers and farmers in Botswana

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Two problem points can be identified in relation to the Kalahari debate concerning the true historical image of the Kalahari's hunter-gatherers. The first point is that this debate has not addressed regional differences of their mutual interaction. The second point is that concrete characteristics of hunter-farmer contact have not been clarified sufficiently, although this promoted cultivation and pastoralism in San society, actually resulting in significant change to the San. Detailed study of changes in San society accompanying these changes must be conducted.

This paper presents a framework to explain the diversity of relationships between hunters and farmers beyond the Kalahari debate through history and prehistory in Botswana. Especially, the formation and change of the relationship between hunter and farmer will be re-examined using original materials. I have undertaken anthropological, ethno-historical, and ethno-archaeological fieldwork in the central region of the Kalahari in Botswana since 1987. Although hunter-gatherers have introduced dry farming and goat herding over the past several dozen years, the principle of equal distribution, which is part of their consumption system, prevents these differences in material wealth from creating a class society. Furthermore, they have produced a socioeconomic relationship with neighboring white farmers or agro-pastoralists. Those relationships are not simply definable as patron-client-type or master-serf-type relationships. Rather, they have changed according to types of activities pursued by the hunter and the farmer, which have depended on climate change. The hunters' continuation of hunting is presumed as a factor allowing them to maintain their own identity. The relationship shared by hunters and farmers for the past 100 years can be classified into three stages. In addition to such original evidence, I will review and reinterpret findings from ethno-historical research in the Kalahari of Botswana.

Thursday 27 June 2013

Lecture Theatre C

Ontological Relationships to the Land

Chairs: Françoise Dussart and Sylvie Poirier

Session abstract

In the course of the last century, hunting and gathering peoples throughout the world have been sedentarized, dispossessed of their lands, and invited to engage in the market economy. They have, however, maintained their intimate relationship with the land. Understanding the different local strategies to renegotiate such relations can help us illuminate how traditional and novel forms of engagement with the land continue to be distinctive. In other words, participants in this panel will examine how in the 21st century as Myers (2000:77) has argued for contemporary indigenous peoples of Australia, how "... they are taught indeed disciplined to signify their experiences in distinctive ways".

The participants to this panel are invited to reflect upon some of the current challenges they face: how to transmit their deep knowledge of the land to younger generations; how to maintain their manifold responsibilities towards the non-human constituents of their world; the redefinition and expression of their relational ontologies; the tensions and overlap between local ecological knowledge and scientific knowledge, among others.

With the help of ecological science... From the reproduction to the restructuration of indigenous ecological knowledge through "natural resource management" in Northern Australia

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In Northern Australia, since the mid-1990s, "indigenous natural (and cultural) resource management" is presented as an alternative and viable option towards economic development, environment conservation and intergenerational knowledge transmission for aboriginal remote communities of the "indigenous estate" (e.g. Altman *et al.* 2007). "Ranger" groups and programs have been established in numerous communities in order to create local job opportunities, to "care for country" (as country is the victim of postcolonial ecological threats), as well as to redevelop or maintain indigenous "traditional" relationships with the land and sea, for the present and the next generations.

These groups and programs are supposed to be the result of both the formalisation of customary responsibilities towards land and sea, and the combination of "traditional" indigenous ecological knowledge with "contemporary" Western scientific knowledge. These two types of knowledge reflect divergent ontologies, respectively ignoring and based on the Nature / Culture dichotomy. Although valued and encouraged both in the literature and by Aboriginal rangers, the implementation of this "two-way" approach faces challenges that highlight unequal power relationships between local knowledge and scientific knowledge.

This paper is based on the ethnography of the interactions between a group of indigenous rangers located in south-east Arnhem Land and the non-indigenous actors who use their scientific background to support and help them. It argues that these non-indigenous people introduce the rangers to – or even impose on them – practices, representations, concepts, concerns and priorities corresponding to their own relationships with the "natural" environment, as well as to their view of how indigenous people used to and should care for their country. Consequently, local people often have the feeling that their knowledge and aspirations about the land and the sea are not respected by their ranger group, whose activities are not fully grasped by the community.

References: Altman, Jon C., Geoff Buchanan, et Libby Larsen. 2007. *The environmental significance of the indigenous estate: natural resource management as economic development in remote Australia*. Canberra: Australian National University, Centre for Aboriginal Economic Policy Research.

Resilience and the politico-symbolic aspects of territorial dynamics among the Baka Pygmies of Southern Cameroon

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This paper will focus on the resilience and politico---symbolic aspects of the territorial dynamics of the Baka Pygmies (Cameroon). A systematic comparison will be made with spatial relationships among the Australian Aborigines. In spite of a common situation of "ex---hunter---gatherers", Baka Pygmies and the Australian Aborigines evolve in very different contexts. Nevertheless, the theoretical approach to territory adopted for the Australian Aborigines, involving a relativist conception of culture in perpetual reconstruction, is particularly stimulating for the interpretation of Baka ethnographic data. Indeed, the Baka share with the Australian Aborigines a strong resilience of territorial politico---symbolic dynamics. These mechanisms are ancient, predating European contact. However, rather than unchanging or lost traditions, it is better to speak of "open" politico-symbolic dynamics, particularly adaptable to change. We find that the Baka Pygmies activate a relational network within a politico---symbolic framework in a way similar to that indicated by analyses of Australian Aborigine societies.

But contrary to the Australian Aborigines who mobilize these dynamics among themselves, Baka activate these in complex processes of interaction with their traditional "farmer" neighbours. Besides, the Baka relational network is expressed by a spatial symbolic activity which is particularly fleeting or evanescent in comparison with that of the Australian Aborigines.

This communication concludes with a discussion of the relevance of a resiliency approach, as well as of the relationships between these territorial politico-symbolic dynamics and contemporary Cameroonian land policy.

Maintaining the world through a logic of relationships: returning to hunt among the James Bay Cree

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Thirty-five years ago, as a young graduate student, I lived in a Cree hunting camp on an extended family hunting territory near James Bay in northern Quebec. Accessible to me only by bush plane and inspiring in its remoteness, it was the centre of the world for my hosts. Each of two households was headed by a couple whose livelihoods and identity were those of the complete hunter, *nituuuu iiyiyuu*. My age-mates in the camp, fresh out of residential school and belatedly apprenticing as hunters, were children of the more senior couple. That autumn, as we travelled by canoe and then on snowshoes to hunt and check traps and fishnets, we heard the faint rumbling of explosives, some fifty kilometers northward, where the first phase of the James Bay Hydro-electric project was under construction. Animals displayed unprecedented behaviours.

Last autumn, I was invited to the same territory for a moose hunt by one of those friends and age mates, now retired from a career as a community police officer and enjoying the hunting life, with a sister who had also been with us all those years ago, and a younger brother who is now the hunting territory leader. The old people have died. I found my friend's camp within a stone's throw of massive hydro towers, the transmission lines crackling in the autumn humidity. Recreational hunters, employees of Hydro-Québec, had been guests on the territory the week previous, welcomed by his family, for particular strategic reasons also connected to the reasons for the camp's location. My friend crooned *nituuuu iiyiyuu* to his brother's young son, a pre-verbal toddler, tenderly conjuring an identity.

I reflect, in this paper, on the ways in which hunting endures, in which Cree logic of relationships is extended to incorporate old friends and newcomers and to maintain a world.

Rethinking transmission of clan knowledge in the Northern Territory (Australia): Yolngu rituals in the classroom

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The Yolngu people, one of the Aboriginal language groups of northeastern Arnhem Land, have lived in settlements since the colonial period. However, today, the traditional patrilineal clan organization continues to remain the basic unit of their social organization. There are about 40 patrilineal clans among the Yolngu and each is custodian for a body of creation stories and a related “country”. Though, living in settlements away from their own countries, ritual performances, and particularly funerary and male initiation ceremonies, have become the most important events through which young participants— both males and females— have the opportunity to create and maintain attachment to their patrilineal countries.

In Aboriginal English, such ritual institutions are often compared to “high schools”. As attendance in local schools run by the Australian department of education is poor to say the least and in light of low academic achievements, several initiatives to include traditional knowledge and ‘Yolngu ways’ in the educational settings have been devised over the past few decades. One of these initiatives is a project, which focuses specifically on the organization of rituals within the classrooms. In this presentation, by focusing on such initiatives, I will show how Yolngu people today are explicitly ‘educating’ their children about their clan countries and related stories.

What is the role of anthropology in cultural reproduction? People, place and personhood in central Australia

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Radical changes are taking place in central Australian Aboriginal lives. Not least of these changes are the demographic transformations that are seeing a decline in the number of elderly people who are well and active, and an expansion of the youth population. Detailed knowledge of the landscape beyond the everyday lines of movement is fragile, and in decline, but relations to land remain of great importance, especially in terms of the potential for income from mining royalties.

Much of the knowledge about the cultural landscape and relationships with it is now objectified in maps and reports produced by anthropologists, but the free circulation of these even to Aboriginal people themselves, is problematic. This paper will explore the ethical, ontological and other issues involved in the use of these objectified materials by Aboriginal people for assisting in the reproduction of relations to their ancestral lands among the younger generations.

Australia's indigenous protected areas: Ontological resistance, articulation and entanglement in the context of natural resource management

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Australia's Indigenous Protected Area scheme has been embraced enthusiastically by Aboriginal and Torres Strait Islander (ATSI) peoples; in recent years ATSI landowners have become the single largest contributors of land to the National Reserve System. Government sees the scheme as a model of 'co-production', where both parties stand to gain; in their view ATSI people primarily gain employment and training opportunities, with follow-on benefits for their communities, while for the state the IPA scheme is a relatively cheap way of adding to the NRS.

In focusing on the Laynhapuy IPA in northeast Arnhem Land, on the country of the Yolngu people, I will explore the view from the other side. I will chart a course between the concept of articulation and the trope of entanglement in exploring how Yolngu use their IPA as one element in a suite of strategies for both ontological and political resistance. I take as my starting point the words of Yinimala Gumana, a Senior Ranger who lives at one of the small homelands settlements on the IPA:

We are putting together so that we can balance the whiteman's society and Yolngu society ... we are still learning, because we are living in technology now ... We can see the new journey. But the culture, don't forget the culture, that's important for us—the land, the *djalkiri*, where the songlines start, where the stories are, where the ancestors [are], that is the important [thing].

Alien relations: biopolitics and the cosmological dilemmas posed for Indigenous Australians in the management of “feral” camels on their lands

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The colonisation of hunter-gatherers and their lands involved the introduction of domesticated species that were integral to the development of settler economies. These animals were bound up with European social and ontological understandings that were profoundly different to those of the peoples being colonised – in particular, notions of the human/animal divide. Indigenous people responded to introduced animals variously with resistance, openness, creativity and resilience. This paper explores Indigenous entanglements with dromedary camels in Australia and their implications for contemporary Indigenous life-worlds.

Camels were introduced to central Australia in the late 19th century and then released in the 1920s when no longer required by Europeans for transport. There are now approximately 750,000 free-ranging camels in Australia, and their population is doubling every nine years. They are perceived to have negative environmental impacts and are the subject of a government funded campaign to reduce their number by shooting. Given that the majority of camels are on Aboriginal land, their management creates dilemmas for Indigenous people who want to maintain proper relationships with their country and the non-human constituents who inhabit it.

Drawing on fieldwork among Warlpiri and Pitjantjatjara, I address the challenges people face in reconciling their responsibilities toward beings to whom they are ancestrally related and to camels with whom they have shared history and whose ontological significance has shifted with people’s adoption of Christianity. I consider how people’s subjectivities are being reconfigured as they increasingly engage with country in the context of bioconservation and IPA (Indigenous Protected Area) projects.

Atikamekw postcolonial territoriality. A complex co-existence and entanglement between Indigenous and non-Indigenous regimes of values

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The Atikamekw are an Algonquian group, now living in three communities in the Upper St-Maurice region (Québec, Canada) and number around 6,000 people. While they have been “invited”, all through the colonial period, to gradually exclude themselves from *Nitaskinan*, their ancestral lands, they maintain to this day intimate relationships with their territory.

In order to regain and affirm their autonomy, the Atikamekw are engaged at three interrelated levels: at the national political level, in arduous land claims negotiations with the federal and provincial governments; at the regional technical level, in their attempts to conclude co-management agreements with non-Indigenous groups of interests, like the forestry industry; and at the level of the communities, on a more social and cultural basis. The Atikamekw are concerned with the maintenance and the reproduction of their customary land tenure system, based on family territories, while constantly adapting it to new constraints, namely Quebec’s administrative delimitations and non-Indigenous activities on Nitaskinan.

The Atikamekw family territories, as postcolonial spaces, have thus become the grounds of complex co-existence and entanglement between Indigenous and non-Indigenous regimes of values, land tenure systems, forms of governance, and conceptions of the forestland and its non-human inhabitants. The Atikamekw are also very much concerned about the transmission of knowledge, values and ethos pertaining to hunting and gathering to the younger generations and explore novel avenues to meet that objective. These different forms and levels of engagement will be discussed in my paper.

Thursday 27 June 2013
Lecture Theatre D

Perspectives on Dravidian Hunting and Gathering

Chairs: P. M. Gardner and P.K. Misra

Session abstract

Since 1943, study of Dravidian-speaking hunter-gatherers has broadened from cataloging culture traits to examining formal and dynamic aspects of the cultures both in their natural and cultural environments and in time perspective. Significant outcomes include (a) clarification of their subsistence strategies, child rearing practices, techniques for managing interpersonal relations among themselves and with outsiders, world views, epistemologies, and rhetoric, (b) study of regional patterns of culture contact and change, and (c) initial research on both DNA and recent prehistory. Given these diverse new lines of work, it is a timely moment to discuss the mutual relevance of some of our disparate findings. In particular, research done so far puts us in an excellent position to begin discussion of factors that may account for both the traditional resilience of India's hunter-gatherers and their recent vulnerability.

Seventy years of Dravidian hunter-gatherer research

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The session opens with a brief overview of what cultural anthropologists have learned during the past 70 years as to basic similarities and differences among the several best-studied Dravidian hunting and gathering cultures (especially Chenchu, Yanadi, (Kattu)nayaka/Jenu Kurumba, Cholakkur, Kadar, Paliyar, and Malapandaram). Where comparative data are adequate, their traditional subsistence economies, food distribution, kinship, egalitarianism, and shamanism have been compared, culture-by-culture, toward this end. Although the degree of acculturation of each people accounts for some of the differences, in several subject areas cultural variation is of such a nature that it is probably better interpreted as the result of long-term ecological adaptation or a function of preferences and tabus. The paper then takes up three factors that, taken together, have been theorized to account for the unusually large overall (present-day and recent) population of hunter-gatherers in India. Finally the paper concludes with brief mention of a few of the most promising new lines of inquiry.

Hunting-gathering in the Tamil region of South India: Historical perspectives

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Hunting-gathering continued to survive as a means of subsistence well into the Modern period in certain parts of India. With the onset of state formation, some hunting-gathering communities were absorbed into the mainstream society. Often marginalized hunter-gatherers do not find place in mainstream history of India, because these communities are not represented in the texts, but mainly in oral traditions. At times, only the archaeological record serves as the texts of these voiceless communities. In a sense there could be a branch called "subaltern archaeology" to represent the history of these marginalized communities. Texts and inscriptions of South India do have references to communities that were involved in hunting-gathering. The author's research on the archaeology and history of the Upper Gundar basin, and also on the ethnographic aspects of Paliyans has enabled understanding of some aspects of hunter-gatherer transformation in the Madurai Region. The paper seeks to investigate the hunter-gatherer communities represented in the Tamil texts (literature and inscriptions) and oral traditions. The Annamar (Ponnar-Shankar) story offers a good example of clashes between hunter-gatherers and migrating agriculturalists. In Medieval Tamil Nadu, between 6th century and 16th century CE, although Pallava, Chola, Pandya and Vijayanagar kingdoms dominated the political scenario in the major areas and in the upper levels of the hierarchy, the remote regions witnessed the interactions among various groups such as pastoralists, agriculturalists and hunter-gatherers. This paper focuses on the dynamic of the interactions between the hunter-gatherers and other communities based on the analysis of texts and archaeological record.

Radical transformation of the region inhabited by the forest dwelling populations in the tri junction of south India: A historical review

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Over the years, foragers in peninsula India apparently have shown remarkable resilience, but their vulnerability has enormously increased. To understand their position it is essential to focus on the dominance of the surrounding population who not only blocked them, but exploited and progressively occupied their territories and introduced commercial activities. Recently their habitats are undergoing rapid transformation. Erstwhile forest dwelling populations must cope with formidable demographic, ecological, economic, communicational, social, cultural, and aspirational changes, plus imposed state laws, state programmes, and welfare and development NGOs. The probability of penetration of extreme ideologues has also been enhanced.

A long historical view of India indicates that forest dwelling populations have not been isolates, compelling us to re-examine the applicability of the concept of hunter-gatherers in India. Forest dwelling populations have interacted with encroaching, plough cultivation based Brahminic Varna-jati civilization for thousands of years, until interfered with during the colonial period. In independent India the scale and pace of changes have increased enormously. Forest dwellers have been overwhelmed. Yet they have retained their identities, raising fundamental questions that need to be understood in the overall existing situation.

The tri junction of Karnataka, Tamilnadu and Kerala has been home of numerous forest dwelling populations at the frontiers of three major cultural regions of India represented by Kannada, Tamil and Malayalam speakers. The region has been massively opened up. An attempt will be made to understand how erstwhile forest dwellers in the northwestern side of the area have been coping with all these new forces.

Setting or Mind-Setting? On Nayaka hunter-gatherer camps with hindsight of the "ontological turn" in anthropology

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Given anthropological theories of how houses reflect and regenerate symbolic schemes and ontological senses, I discuss in this presentation what, if anything, can be learnt about hunter-gatherers' perceptions of their social world from their dwellings? Granting that their dwellings – while described by ethnographers as "huts", temporary shelters, etc. -- constituted for them a permanent and adequate way of dwelling, I ask what ontological senses of self, relations and community do these dwellings embody and regenerate? What habits of mind and way of thinking they cultivate? I draw on a long-term study of an indigenous forest people in the Nilgiri-Wynaad, the Nayaka, who, when this study began in the late 1970s, still maintained hunting and gathering traditions.

At home in a changing world: Contemporary life of the Kattu Nayaka in South India

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In this study I explore the contemporary changes in the life of a small group of Nayaka, living in the Nilgiri district, Tamil Nadu. In the past few decades various groups in the region, including the Nayaka, became the focus of governmental and non-governmental development programs, working to assimilate them in the surrounding dominant society. Here I focus on housing projects conducted by the Government and NGOs since the late 1990s, as a case study for the Nayaka's relationship with various external institutions involved in their life and the ways they relate, perceive, interpret and act in their contemporary changing world. The governmental and NGO's housing projects are aimed to support development efforts for the "backward forest people" through changes in their living conditions and environment, which will assumingly produce a significant social change. However, by looking at the way Nayaka live, dwell and act in their new brick-and-mortar villages, I argue that the Nayaka manage to modify this foreign environment and reinterpret it as a continuum of their traditional villages. Since they perceive their newly built environment differently than the way its external builders perceive it, the housing projects do not yield the desired social changes. Instead, the Nayaka's perception allows them to preserve and maintain to a large extent their relational epistemology (Bird-David, 1999) and act in-the-world through social relations and emphasis on living-together in full visibility and mobility.

Ethics and practical reason among the Jenu Kurumba (South India)

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How do gatherer-hunting people imagine what a good life is all about? And how do those articulations relate to other cultural formations in particular postcolonial sites? The paper presents some of the ways the *Jenu Kurumba* in South India answer those questions. Based on almost a decade of fieldwork it argues that these people primarily think in terms of what Charles Taylor (1989) has called "engaged practical reason." They actively engage the ethical quest of how to live in a good, indeed in the *best* imaginable way and articulate these ideas in various discursive forms. The talk presents some of these discourses, namely the shamanic ritual performances called the "conversations about the good and the bad."

Examining the ethical imaginations and the "performance of virtues" (Widlok 2004) expressed through these conversations it is also proposed that an Anthropology of Ethics offers new ways of representing the "native point of view," not only of gatherer-hunting people.

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Anarchism, individualism and South Indian Foragers: Memories and reflections

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My paper offers some critical reflections on the relationship between the individual and social life amongst South Indian foragers. It will bring together three essential themes: the notion that foragers in South India express an "individual autonomy syndrome" (Gardner), one quite distinct from that of Western possessive individualism; the suggestion that foragers are "dividuals" (Bird-David) – although of course everybody in the world is a social being (i.e., dividual) with multiple subjectivities or social identities; and, finally, the importance of social agency which (contra Norstrom) I long ago emphasized with regard to the Malapantaram, particularly in retaining their autonomy vis á vis the Indian state, the constraints of mercantile capitalism and the people of the plains -- the nattukaran, a thesis that anticipated James C. Scott's recent anarchist history of South East Asian hill peoples (2009).

Immediacy and sharing patterns among the Nayaka

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Sharing is a main topic in the literature about hunter-gatherers. Questions such as "how do these people share?" and "why do they share?" are central themes in this field of study. Lesser attention is given to what they do not share. Even lesser attention is directed at understanding "why they share some things and refrain from sharing other things?" This question, narrowed down to the Nayaka case, is at the heart of this paper. I will argue that Nayaka sharing is intimately related with economic activities which are characterized by immediacy in time, needs, consumption and use-form. They do not share whatever is organized to stand available for their own benefit. They also do not share whatever is approached as a means to get something else, nor do they share things obtained through bartering and selling.

Food-sharing and distribution of resources among hunting and gathering societies: A conceptual synthesis

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This paper discusses two important and basic concepts, distribution and sharing, used by ethnographers in describing the life-style of hunting and gathering communities. With the help of ethnographic data on the Cholanaickar, a contemporary hunter-gatherer people, the paper argues that the two concepts, "food-sharing" and "distribution" need to be treated as two independent concepts describing two kinds of socio-economic transactions among hunter-gatherers.

At present, ethnographers have a tendency to use distribution and sharing as synonyms. The paper limits the discussion to food-sharing and distribution of resources among hunter-gatherers, particularly "adult-adult food-sharing" (Kaplan and Hill 1985: 223) between members across households living in a cave or camp or camp site (Adhikari 2001:250; Bhanu 1992:32; Binford 1968; Lee 1968:31; Woodburn 1982: 435). "Food-sharing" among hunter-gatherers is direct, reciprocal and instantaneous, with all participants are treated as equal, unlike distribution, which is one-sided, intermittent, controlled, directed and guided or presided over by the owner of the animal brought in.

Square pegs in round holes: Perceptions of hunter-gatherer school drop-outs of Kerala, South India

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This paper is an in-depth enquiry into the subjective experiences of the Ashram school drop-outs of Cholanaicken and Kattunayakan (including Pathinaicken) tribes of Nilambur forests, Kerala, South India. Ashram schools are residential schools established in India, as per the recommendation by the Dhebar Commission and the National Policy on Education (NPE), exclusively for Particularly Vulnerable Tribal Groups (PTGs) for their educational advancement. It is significant to note that even after providing all infrastructural facilities and educational inputs, drop out of children from these schools is a common phenomenon. It is observed that the studies conducted on the issue of drop-outs are mainly focused on the views of outsiders and seldom taken into account of drop-out children's perspectives. In this context, the study concentrates on the issues of drop-out children from one of the two Ashram Schools in Kerala viz., Indira Gandhi Memorial Model Residential School, Nilambur, Malappuram district. It focuses on the essence/spirit of the drop-out children's voices and those of their parents, friends and social functionaries; and juxtaposing them against the narratives of the officials and staff with whom they have close everyday contact in the school system. It also probes into the possible suggestions for the improvement of Ashram school to ensure quality education.

Chenchus of Koornul District: Tradition and reality

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My paper is based mainly on fieldwork that I conducted with Chenchus in Kurnool District in 2009 and 2012, supplemented by the publications of others. First, I examine Chenchus' subsistence and their traditional way of life (which still exists despite their modern diversity). Second, I focus on their social structure, especially on the groups to which each Chenchu belongs and on the forces that keep them in those groups. Third, I look at the pressures on both sexes to have arranged marriages, this revealing that the form of marriage depends on the form of subsistence. Finally, I discuss what many researchers call the Chenchus' "atomistic social structure," even though I find that features of this "atomistic structure" can be seen today only in the patterns of food distribution and general social equality.

The native point of view: A discussion concerning 50 years of change with Pichai, the Paliyan leader of the Kollakkarai Valley in the Palni Hills

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I met Pichai for the first time in 1991. He was 36 years of age and he and his fellow Paliyans in the Kollakkarai valley had come together from several small settlements to establish a village of their own. This step initiated a transition of their economy from hunting-gathering and plantation work to successful cash-crop cultivation. This paper is an excerpt from a longer interview with Pichai in 2012, more than twenty years after our first acquaintance. Our discussion circled around his views concerning pros and cons of these changes, the strengths and weaknesses among the Paliyans, and the way he looked upon academic views of the same.

Friday 28 June 2013

Lecture Theatre A

New population genetics approaches to investigate the origins and diversity of hunter-gatherer societies: socio-cultural behaviors influence mankind's evolution

Chair: Paul Verdu

Session abstract

Population genetics methods have been used extensively to study the origins, demography, and biological diversity of numerous Hunter and Gatherer populations worldwide. Using interdisciplinary approaches bridging anthropological genetics and cultural anthropology, numerous studies have provided insights into the effects of marriage rules, population mobility, and ethnic boundaries in pluri-ethnic contexts on the biodiversity and evolution of these populations.

We aim to provide an overview of the most recent and stimulating research in anthropological genetics and human population genetics that focuses on the reconstruction of the demographic and evolutionary history of Hunter and Gatherer populations around the world. We hope to put forward research conducted in an interdisciplinary framework, reaching out to other fields of cultural, physical, archaeological, and biological anthropology.

Sociocultural behavior, sex-biased admixture and effective population sizes in Central African Pygmies and non-Pygmies

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Sociocultural phenomena, such as exogamy or phylopatry, can largely determine human sex-specific demography. In Central Africa, diverging patterns of sex-specific genetic variation have been observed between mobile hunter-gatherer Pygmies and sedentary agricultural non-Pygmies. However, their sex-specific demography remains largely unknown. Using population genetics and Approximate Bayesian Computation approaches, we inferred male and female effective population sizes, sex-specific migration and admixture rates in 23 Central African Pygmy and non-Pygmy populations, genotyped for autosomal, X-linked, Y-linked and mitochondrial markers. We found much larger effective population sizes and migration rates among non-Pygmy populations than among Pygmies, in agreement with the recent expansions and migrations of non-Pygmies and, conversely, the isolation and stationary demography of Pygmy groups. We found larger effective sizes and migration rates for males than for females for Pygmies, and vice versa for non-Pygmies. Thus, although most Pygmy populations have patrilocal customs, their sex-specific genetic patterns resemble those of matrilocal populations. In fact, our results are consistent with a lower prevalence of polygyny and patrilocality in Pygmies compared to non-Pygmies and a potential female transmission of reproductive success in Pygmies. Finally, Pygmy populations showed variable admixture levels with the non-Pygmies, with often much larger introgression from male than from female lineages.

Social discrimination against Pygmies triggering complex movements of spouses in intermarriages can explain these male-biased admixture patterns in a patrilocal context. We show how gender-related sociocultural phenomena can determine highly variable sex-specific demography among populations, and how population genetic approaches contrasting chromosomal types allow inferring detailed human sex-specific demographic history.

Genome-wide diversity of hunter-gathering and food-producing African populations does not mirror the impact of modes of subsistence on human evolutionary history

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The transition to farming represents probably the most important cultural innovation that the human species has experienced. Agricultural technologies allowed early communities of farmers to produce more food resources from their environment, with respect to hunter-gatherers. The increased carrying capacity of cultivated habitats resulted in dramatic changes in the worldwide distribution and demographic regime of human populations (1). Furthermore, it has been suggested that this technological, demographic and socio-cultural revolution was accompanied by a period of maladaptation due to drastic and rapid changes in environmental selective pressures (2, 3). Nevertheless, this hypothesis has never been formally tested, owing to the difficulties in identifying pathologies from human archeological remains (4, 5). Alternatively, an evolutionary genetics approach could be particularly relevant to evaluate, at the level of the entire genome, the extent to which modes of subsistence have influenced the evolution of human populations. To this end, we performed whole-genome resequencing at a ~5X coverage of 20 African hunter-gathering Pygmies and 20 food-producing Bantus, and genome-wide genotyping of more than 300 individuals from 5 Pygmy and 2 Bantu populations. We first showed that several Pygmy populations present extensive admixture with Bantu populations, in a sex-specific manner. Second, our results demonstrated that the levels of divergence among Eastern Pygmy groups have clearly been underestimated. Third, several lines of evidence support the notion that the effective population size of Bantu populations is 1.5-times larger than that of Pygmy populations. Fourth, we identified by whole-genome re-sequencing 15 million SNPs, of which ~30% were novel. When

comparing the proportion of non-synonymous mutations between Bantus and Pygmies, we observed a deviation of neutral expectations, suggesting that the efficacy of negative selection has been different in the two human groups with different lifestyles. Finally, our genome-wide screen for positive selection identified a number of genes differentially selected in Bantus and Pygmies, of which some have a well documented role in host-pathogen interactions. Altogether, our study provides evidence that the diverse modes of subsistence and ecological habitats of human populations have impacted their genome diversity and evolutionary trajectories, resulting in present-day population differences in relation to health and disease (6).

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A genome-wide history of the admixture history of the "Bantu expansion"

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The dispersal of Bantu speaking populations started approximately 5kya from the Nigeria-Cameroon region, reaching the southernmost part of the Continent in the last five hundred years. The demography of this process has been hotly debated across different disciplines, including archaeology and linguistics, with genetics supporting the "demic" impact of the "Bantu dispersal" in Sub-Saharan Africa. However, the details of this process are little known, in particular the degree of interaction and assimilation experienced by the non-Bantu speaking groups living in the region before the arrival of the agro-pastoralist societies associated with the Bantu languages.

We analyzed a large set of Bantu populations genotyped for several thousand nuclear markers using a novel methodological approach that explores the haplotypic composition of the genome to reconstruct the ancestry of the source populations. Our results provided evidence for geographical and cultural variation in the interaction among these groups and highlighted the pre-Bantu components present in these communities, shedding new light on the pre-Bantu population structure of the region.

A genetic approach for investigating cannibalism in the prehistoric Sweden

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Cannibalism in prehistoric times has been a much debated subject among scientists for many years. The subject itself is repulsive and emotionally disturbing. However, the damaged, scarred and charred bones found throughout the whole world from different time periods during archaeological excavations suggest that this may actually be true. It is of course not so easy to distinguish by analyzing cut marks on the bones when there are so many other factors in play. However, with new approaches to archaeological remains, new clues are being discovered about cannibalism being a wide spread practice among the ancient people in Paleolithic and Mesolithic Ages. Up to recently Fore people in Papua New Guinea were practicing endo-cannibalism (consuming the flesh of an ally after their death) for religious reasons until approximately 10% of the population perished with kuru, a neurodegenerative disease caused by consuming human flesh. Research that has been carried out after the kuru epidemic in Papua New Guinea showed that a heterozygosity in codon 129 in the responsible gene (PRNP), creates resistance to kuru and prolongs the incubation period of the disease. Therefore, heterozygotes have higher fitness and survival rates which suggest balancing selection at play.

If our ancestors were cannibals could we trace it back? If they were, did they suffer from kuru like their contemporary successors in Papua New Guinea? In this paper, I investigated these questions by sequencing the coding region of the PRNP gene in Neolithic and Late Mesolithic hunter-gatherers and in Neolithic farmers. Nine Mesolithic and Neolithic human samples were successfully sequenced for 463 basepairs of the protein coding region of PRNP gene on Illumina platform. 25 polymorphisms were detected including codon 129 and a possible ancient polymorphism on codon 169. Tajima's D results yielded no indication of balancing selection in prehistoric Scandinavia. Although, all remains from Late Mesolithic Age were heterozygotes for codon 129, further analysis is needed to confirm the hypothesis of cannibalism in prehistoric Sweden.

Population structure and evidence of selection in the Khoe-San and coloured populations from southern Africa

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* *These authors contributed equally to this work*

Presenting and corresponding author

The San and Khoe people currently represent remnant groups of a much larger and widely distributed population of hunter-gatherers and pastoralists who had exclusive occupation of southern Africa before the arrival of Bantu-speaking groups in the past 1,200 years and sea-borne immigrants within the last 350 years. Mitochondrial DNA, Y-chromosome and autosomal studies conducted on a few San groups revealed that they harbour some of the most divergent lineages found in living peoples throughout the world. We used autosomal data to characterize patterns of genetic variation among southern African individuals in order to understand human evolutionary history, in particular the demographic history of Africa. To this end, we genotyped ~ 2.3 million genome-wide SNP markers in 220 individuals, comprising seven Khoe-San, two Coloured and two Bantu-speaking groups from southern Africa. After quality filtering, the data were combined with publicly available SNP data from other African populations to investigate stratification and demography of African populations. Genotypes and inferred haplotypes

were used to assess genetic diversity, patterns of haplotype variation and linkage disequilibrium in different populations.

We found that six of the seven Khoe-San populations form a common population lineage basal to all other modern human populations. The studied Khoe-San populations are genetically distinct, with diverse histories of gene flow with surrounding populations. A clear geographic structuring among Khoe-San groups was observed, the northern and southern Khoe-San groups were most distinct from each other with the central Khoe-San group being intermediate. The Khwe group contained variation that distinguished it from other Khoe-San groups. Population divergence within the Khoe-San group is approximately 1/3 as ancient as the divergence of the Khoe-San as a whole to other human populations.

Genetic diversity in some, but not all, Khoe-San populations is among the highest worldwide, but it is influenced by recent admixture. We searched for signatures of selection in the different population groups by scanning for differentiated genome-regions between populations and applying haplotype-based statistics within populations. By means of the selection scans, we found evidence for diverse adaptations in groups with different demographic histories and modes of subsistence.

Friday 28 June 2013

Lecture Theatre B

Hunter-gatherers and their neighbours (Part 2)

Chair: Kazunobu Ikeya

Ethnic minority communities' socio-economic interactions within the Okavango Delta: San Bugakhwe and Wayeyi

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Over a very long time the Okavango Delta has been shaping the size of territories and the distribution of social groups. Each settlement required a nutritional base. The aim of this paper is to examine the socio-economic interactions amongst the San communities and their neighbours in the Okavango delta, north-west Botswana. The focus will be on the settlement history of the San Bugakhwe and Wayeyi (BaYei/Yei) communities within the area today designated as Moremi Game Reserve and its vicinity areas (old' Khwai). Today the Bugakhwe (peri-river Bushmen) are found mainly in the panhandle (e.g. Gudigwa and Beetsha and Khwai).

The paper will pay attention to the long established interaction between the Bugakhwe of Khwai and the Yei of Sankuyo both located in the Wildlife Management Areas (NG 19 and 34 respectively). There appears to have been no Yei settlement of any permanence in the Moremi Game Reserve area. However, oral history has revealed that while the Bugakhwe were still in the 'old Khwai' sites, they had the Yei as their neighbours who were residing in the western side of the Bugakhwe sites called Xwaara and ||Xam (towards the northern part of the Game Reserve). This was before the Yei moved back to settle in Sankuyo. The interest of the paper is to examine what oral information affirms as 'close interaction' between the BaYei of Sankuyo and their BaSarwa neighbours in the old settlements to understand their livelihood strategies within the Okavango Delta. a region that was affect by tsetse fly. The paper will use the ethno-historical approach in analysis.

Resilience and flexibility: history of hunter-gatherers' relationships with their neighbors in Borneo

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The aim of this study is to consider the relationships between hunter-gatherers and their neighbors including agricultural and urban societies in Borneo. This study especially focuses on the historical-anthropology view point and analyzes throughout these three periods; before 1960s (foraging period), 1960s-1980s (settled period), 1980s-2000s (development period).

The main subsistence activity before 1960s was to trade various forest products with neighboring agricultural societies. Among the hunter-gatherers, those who lived in the middle basin were easily affected by administration or market economy due to the close distance to the fort or bazaar. In this period, some of the hunter-gatherers were assimilated into the agricultural societies or Chinese, owing to the influence of radicalized head-hunting. On the other hand, some of them resisted against neighboring societies and became isolated.

After the 1960s, most of the hunter-gatherers in Borneo settled down. Many of them continued hunting-gathering and semi-settled dwelling because of the high market demand for forest products, however. At the last two decades of 20th century, the environmental change and land use change occurred in Borneo. Therefore nature conservation campaign and indigenous people's movement became active. With the influence of such campaigns, the Penan, majority of the hunter-gatherers was symbolized as "forest people". On the other hand, the minority hunter-gatherers strengthen the economic relations with Chinese. The recent relations between hunter-gatherer and neighboring society became more diversified, as there are multiple layers of relations including labor exchange, trade and intermarriage.

Changing landscapes and the representation of the Mlabri ethnic group in the resettlement projects under the initiative of HRH Princess Sirindhorn of Thailand

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This paper explores the facets of resettlement sites and investigates the making of the ethnic representations in order to see how it reshapes the Mlabri existence under the contemporary state-led development. While there are many scholars studying for decades the relations between the Mlabri, once being seen by the Thai government as the separated hunter-gatherer society, and other ethnic groups in Thailand, there is the left-opened gap for understanding of the co-existence of the hunting-gathering societies with others. Particularly based on the recent resettlement project to “save” the Mlabri under the initiative of HRH Princess Sirindhorn since 2008, it is crucial to note that this is not the ‘normal’ transition from the nomadic hunter-gatherer to an agriculturalist society as well as the “smooth” relationships amongst the ethnic groups and the state.

The main discussion of this paper is that the different facets of the resettlement sites and the relationships of the Mlabri and their neighbors depend on the social networks as well as the historical and geographical factors in relation to the state exercising its power via development upon its subject on the uplands.

Bongo musics: origin and diversity (Gabon)

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The Bongo Pygmies are generally considered as emblematic for the Pygmies living in Gabon. However, it appears that they present a great diversity which is extremely poorly documented so that we often generalize specificities of a single group as being characteristic for all groups sharing this name. Actually, there are at least 6 groups living in different areas and ethnic surroundings. Still, it is impossible to determine today if their name covers a common origin for all these groups and if it is an endogenous or exogenous denomination.

Through the composition of their musical patrimonies, this paper proposes to analyse this Bongo diversity by the following parameters: repertoires, musical instruments, vocal techniques and polyphonic processes. As Bongo live in close contact with their neighbors, our subject is to determine how the subsequent cohabitation with different neighbors may have left an imprint in the musical culture of Bongo groups, as their possible common origin could also leave clues in their musical activity. We will also discuss how these musical parameters can indicate a kinship, on the one hand with other Pygmy groups of Gabon and, on the other hand, with the Aka and the Baka which are our term of reference in the comparison of the musical patrimonies of different Pygmy groups.

Caught in the web, but still in the past: foraging, farming and socioeconomic relations between the Awá-Guajá and their neighbors

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As we examine Amazonia in hindsight and evaluate recent evidence, a rich and complex past is revealed, showing a unique dynamic transpiring between foragers and farmers. As relations are played out between these groups we witness many scenarios. Both parties may be engaged in relations of friendly exchange, tenuous alliances, hostility, or in recent times, forced merging or separation by mainstream society. Likewise, it also becomes hard to discern the difference between these groups as both embrace differing degrees of hunting, farming, fishing and gathering. In recent times, studies in Historical Ecology, Archaeology, Ethnohistory and Linguistics help us reconstruct a past that explains the present in forager-farmer relations.

In this paper, I would like to examine these questions among the Awá-Guajá of the Brazilian Amazon and how they have engaged with their neighbors, the Ka'apor and Tenetehara. The Awá-Guajá came into permanent contact with Brazilian national society in 1973 and, since then, they were settled into four semi-nucleated communities by Brazil's Indian Service. As the Awá-Guajá are transitioning into a settled, farming mode of subsistence, we are witnessing a compression of evolutionary time as contact has intensified the use of resources, engagements with the Ka'apor, Tenetehara, and mainstream players. Regional development and lumber activities have also impinged upon these groups, inducing a number of individuals to participate in illicit activities. I conclude this paper by examining how each of the four Awá-Guajá communities has embraced contact, providing a narrative of their experiences and their involvement with different interlocutors.

Friday 28th June 2013
Lecture Theatre C

The Crafts of Hunter-gatherers

Chair: Lye Tuck-Po

Session abstract

The making and knowing of crafts presume a certain amount of engagement with the environment, in knowing where natural materials are, how to assemble them, what to do with them, and how to work with them. Yet crafting, which involves creativity and improvisational skill, also suggests construction, a process that distances self from the materials at hand. This is the very same dilemma that hunters face with regard to the knowing and hunting of animals. Animals are part of the moral ecology of a hunter's world, simultaneously in kinship with humans yet prey to them. Hunters around the world resolve this dilemma in different ways, for example, through taboos that regulate proper conduct towards animals, game, and food, and recognition that animals move in and out of a spectrum of identities from environmental subject to object. Might a focus on craftwork, normally relegated to discussions of material culture and social change, elucidate a similar range of philosophical, epistemological, and political issues?

Hunter-gatherers make crafts, craft ways through modernity, and display craftiness in their dealings with the broader world. There is at least one contemporary context where all three senses of "hunter-gatherer craftology" are invoked: conservation and development projects where craft-marketing is promoted as a sustainable source of livelihood. A great deal of research on marketing and sustainability issues has emerged over the course of environmental debates. There is also an established literature on the anthropology of arts and crafts. But there is not much conversation across these domains. This panel aims to open up a new strand of conversation, between studies of hunter-gatherer craft practice, of their ways of being and acting in the world, and of the possibilities of craft in the face of resource degradation and decline.

The state of fibre at Gapuwiyak, Arnhem Land

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The importance of fibre objects to members of communities in Arnhem Land in northern Australia has not always been understood or even known in the wider area of Australia. By taking a closer look at one place, Gapuwiyak or Lake Evella, this paper aims to identify the desires and intentions of the makers in the roles that objects crafted from fibre have played in the past and their trajectory into the future. The ways in which objects are used and the paths they follow throughout their lives have an impact on the makers. In Gapuwiyak the women who are the makers have displayed great resilience in the maintenance of their fibre practice since the establishment of their community over forty years ago. The making, the morphology, meaning and use of their work is closely bound with place and the artist's connection to a particular area but extends to a more general concept of 'country'. More contemporary issues such as environmental ones do impact artists in some aspects of their work but the sustainability of fibre practice is a greater issue. Sustainability can be seen in a number of ways, use of materials, as a physical practice and as a livelihood. The women of Gapuwiyak involved in fibre practice are of varying ages but are mainly older people. The responses are varied but there is a will to continue the tradition. Lucy Wanapuyungu highlights the situation in this statement 'Those ladies are getting old. And myself, I'm worn out, but I'm still making neat work, sometime.' (October 2008)

Weaving cultural resilience in a damaged natural environment: Case study of a Xwelmexw Coast Salish basket-maker

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The Xwelmexw Salish of the northwest Pacific—especially in their part-time activities as seasonal salmon fishers, hunters, or gatherers of berries, roots and medicines—witness daily the damages modernity have wrought on their ‘relatives,’ the sentient natural world. It has become a world over-populated predominantly by humans at the expense of other species. It has less bounty to share with its first peoples. The artists go to the forests to collect materials and reflect on the changes around them; they see their weaving, carving and basketry as both a source of modest income and a way to raise awareness in the wider society. They feel fine craft production indicates the need to savour local heritage and protect Mother Nature from rampant and industrial harvest methods and unbridled financial land speculations. A group of Xwelmexw elders, mostly women, who received training in arts and crafts during childhood, have spent the past 40 years practicing and proselytizing their arts by example, both in their home communities and in the wider world. They share their skills and teachings more widely than was formerly the custom.

They argue that to practice the arts of their people is to practice cultural resilience and strengthen self-reliance and cultural pride, something sorely lacking in many of their young people. They point to decades of cultural and psychic suppression by church and state. Their craftwork is informed not only by pride in a heritage of excellent workmanship, but also serves as a conduit for the life force in the land to enter society. They feel a compulsion to pass on cultural ways to the coming generations. Organizing themselves in the 1960s to break the taboos imposed by churches by daring to produce art work, they found themselves facing other needs. They became involved in building local social infrastructure, lobbying for access to welfare, education and health, and arguing that women’s arts could help to feed their children.

This paper focuses on the case study of an elderly basket-maker and weaver who has been in the forefront of this domestic movement. She argues that if her descendants are to retain and rebuild the ethos of their foraging lifeways then craft production is essential to their identity. She dismisses various online courses for learning ethnic arts as ‘hobby activities’ and stresses that face to face learning (by watching and doing) in relation to family and nature are essential for building strength, discipline and self-worth in both individuals and whole communities of hunter-gatherers in the twenty-first century.

Crafting in a changing environment: the consequences of the invasive plant *Lantana camara* for Solega basket production and trade

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The scheduled tribe known as Solega¹ are forest foragers and swidden cultivators in the dryer, eastern ranges of the Western Ghats of southern India. Though data is scarce², as former hunter-gatherers, they appear to have subsisted off of wild yams, wild leafy greens, fruits, bamboos shoots, honey collecting and the hunting of deer, pigs and game birds. Trade in honey and bamboo baskets, among other forest products, may have given them access to goods such as salt, sugar, bill axes, cooking pots and cloth³. Perhaps of ecological significance, they used fire to keep the forests open and park-like, which facilitated the growth of wild yams, grasses for hunted herbivores, as well as allowed for easier avoidance of more dangerous wildlife such as wild elephants. Sometime in the past⁴ they adopted the cultivation of finger millet and mung beans, sown using simple broadcasting of seed in recently burned forest clearings.

Today, their forests are controlled by the State Forestry dept., in the form of Forest Reserves and, most recently, Tiger Reserves; the government has been encouraging resettlement outside of the forests since the 1970s; the area is subject to religious pilgrims and nature tourism; their younger members are going to schools and/or working for quarries, plantations and other industries far from home; and their environment has been invaded by the American shrub *Lantana camara* which has choked their forests almost completely, threatens their agriculture and trade in forest products and makes travel both arduous and more dangerous due to increased wildlife encounters. They are also the subjects of several development and conservation programmes, focusing on health, education, agriculture and food security, small enterprise, and conservation of wildlife.

This paper then, reports on a pilot project to understand how the Solega are adapting to the dramatic environmental change caused by *Lantana*, in the context of the other processes of change and by focusing on knowledge, values, assets and livelihoods. Of particular interest here is the impact on bamboo resources and basketry production and trade. The pilot has demonstrated how particular aspects of Solega society and culture affect their responses to environmental change, and calls for further research and, more generally, further conceptualization of the ways human are adapting to biodiversity change.

¹A.k.a. Soliga or Sholega

²They show many characteristics of a former hunter-gatherer society, and indeed recent genetic research links them as closer to Australian Aborigines than surrounding Indian populations, possibly making them among the earliest modern human inhabitants of southern India. How they have been able to main such genetic fidelity over so many thousands of years is yet to be determined, but clan endogamy and a somewhat remote and inhospitable mountain environment may have played important roles.

³Their economic relationships, underpinned by their knowledge of the forest and its valuable resources, to more powerful outsiders, whether farmers, traders or the royalty of the Mysore kingdom, may have also helped them to maintain autonomy and control over their lands.

⁴There are no known colonial records of Soliga not planting millet so one must assume that this practice is much older, and perhaps the influence of the Mysore kings and farmers in the surrounding Deccan plateau is centuries old.

Punan crafts and past and present cultural and economic trends: "We taught them so they could produce for us"

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Linked to their nomadic life ways, the material kit of hunter-gatherers worldwide is generally quite limited. Early accounts of Borneo's Punan and Penan nomadic bands stressed this indigence. However, some bands soon acquired from or were taught by their settled neighbours a variety of techniques, ranging to hardwood blowpipe making to blacksmithing to breeding hunting dogs, and managed to excel in them and, in some cases, surpass their masters. These farmers often commissioned nomads to produce goods for trade. While nomads on the move used and carried very few types of basketry (and probably not even a sleeping mat), they provided their neighbours with a variety of high-quality plaited artifacts, somehow another type of NTFP. Catering to these neighbours, the nomads adjusted to the latter's requirements (in terms of form and function) and tastes (in terms of decoration). Once they had settled down, some groups displayed remarkable creativity and innovation in style and decoration and, although much variation was found with time and place, Borneo's former nomads came to be famous as producers of plaited rattan baskets and mats. Markets for their goods, formerly monopolized by their farming neighbours, have now reached out well beyond Borneo to museums and collectors. However, despite development programs geared at promoting Punan/Penan crafts and generating income for isolated villagers, these crafts have been copied by downriver people or urban businessmen, thwarting Punan market channels.

Combs, baskets and mats: The practice of craft and the craft of hunter-gatherer history

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Drawing on ethnographic studies of the Batek of Pahang and Western Penan of Sarawak, both of Malaysia, this paper will examine how studies of craft and studies of history are linked.

The Batek will carve important cultural motifs such as flowers, mountains, rivers, and pathways and individual memories of past travels and landscapes into their bamboo combs. This practice is an explicit example of links between craftwork and ethnohistory. It is fairly easy to make a comb. Frequently the work is shared among different people, such as between husbands and wives, with one collecting and cutting the bamboo, and making the shape of the comb, and the other doing the intricate design work. Comb-making is an excellent example of distributed knowledge. Combs are made for daily use, sometimes exchanged with relatives and friends, and are made for sale to tourists as well. They are not reified as identity symbols or highlighted as means of recording indigenous history. They are just commonplace objects into which people (mostly but not exclusively women) have incised specific memories as decorative designs.

The Penan situation is quite different. As long recorded (see Sellato, this panel), Penan are justly renowned as makers and vendors of fine mats and baskets, which were among the products they exchanged with longhouse traders and patrons. These products are made of rattan, and often decorated with elaborate designs. The cultural origins of these designs are not clear. There is a lot of intercultural borrowing across communities in Borneo and designs may be shared across communities. Possibly because of the formalistic nature of weaving, learning how to weave takes years of study and apprenticeship, and is exclusively a female enterprise. It is an endangered craft, in that young women seem less and less keen to take it up. Though craftwork is an integral element of Penan history, it is less clear how women weave their histories into specific products.

In both settings, there is a direct and intimate relationship between makers and their materials, and a similar relationship between craft practice, environmental affordances, and the global economy, but there the similarities end. Drawing on such similarities and differences, this paper will reflect on hunter-gatherer environmental experiences, challenges to materializing history in oral societies, and methodological problems and prospects in the study of craft practice.