

# **As well as words: Congo Pygmy hunting, mimicry, and play**

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Typed on PC using Microsoft Word XP in British English  
(‘Figure 1. Some examples of Mbendjele hunter’s sing-  
language’ has been sent as a 300dpi TIFF image to appear  
between pages 12 -13.)

**Jerome Lewis, Department of Anthropology, University College London**

jerome.lewis@ucl.ac.uk

## **As well as words: Congo Pygmy hunting, mimicry and play**

### ***Forest hunter-gatherers***

In the dense equatorial forest of the Congo Basin, seeing is useful for following events close-by, but only hearing reveals what is further away. As Mbendjele hunter-gatherers in northern Congo-Brazzaville move about their forest they are hyper-sensitive to the sounds around them. All members of the party, children included, react instantly to a crack, a low rumble or an animal call by stopping mid-step, balancing on one leg if necessary. Silent and motionless, they strain to hear any follow-up sounds that will tell them whether to run for their lives, chase after their supper, or just continue onwards.

The significance of sounds for Mbendjele Pygmies has consequences on communication that may be suggestive about conditions relevant to the emergence of language. In particular, the Mbendjele's rich communicative culture demonstrates the importance of interpreting language broadly, going beyond just speech with words to consider all the ways that sounds are strung together to convey meaning effectively.

Mbendjele have developed specific styles of communication for different audiences and situations. They mix words with sung sounds, ideophones, expletives, whistles, signs, hand signals, gestures, vocabulary from other peoples' languages, animal sounds and other environmental sounds, sometimes in a single speech act. In the context of forest hunting and gathering, the role of different language styles and communicative strategies suggest that diverse styles of communicating could have been crucial to the survival of early humans, and imply that our focus on words may be partly due to a modern bias to lexical expression. Here it is argued that in terms of iconicity, words are at the extreme end of the symbolic communicative continuum.

Speech and speaking styles are gendered in many cultures, here they are too. In the forest, for instance, whereas men tend to walk quietly in small groups or alone and use a variety of disguised and undisguised speech styles, women walk in large groups, rarely alone, and accompany each other's speech with conventional sung sounds that contribute to increasing the volume and distinctive melodiousness of their conversations. Women talk, sing or yodel loudly in the forest to ensure that they do not surprise dangerous animals. Menstrual odour is said to anger large dangerous animals such as gorillas, elephants, buffalo and leopards, causing them to charge or attack people who smell of it. This is culturally elaborated into a complex of practices and taboos referred to as *ekila* that define the sexual division of labour and proper sharing practices (Lewis 2002: 103-123, forthcoming).

Conservationists from the Wildlife Conservation Society at the nearby Nouabali-Ndoki National Park estimate that there are approximately 23,000 gorillas and 9,000 elephants in an area occupied by 7500 Mbendjele. This fearfulness, therefore, is not unreasonable.

Women's fear of attack encourages them to do their daily activities in noisy groups. Infants and small children will be either left at camp or held close in a bark or cloth sling. They go gathering, fishing, digging yams and collecting nuts, insects and fruit in groups, often with boisterous older children in tow. Women spend much of the day together. The strong solidarity which this establishes between them has important consequences for their status and political power because they use it effectively to influence camp decisions. If women refuse a proposition made by men, men have great difficulty in persuading them to change their minds, and women quickly support each other in situations of conflict with men.

Men mostly talk in turn, and although tunefully responding to what is said, they

do this in a subdued manner by comparison with women. Although men can speak loudly in camp, they do so less in the forest. When hunting they value quietness explicitly. Not simply in speech but also in step. Particularly accomplished hunters would walk in smooth slow motion, gently padding their feet down toe-first, gliding silently through the forest. If passing through dense, noisy undergrowth, we would sit down in silence from time to time in order to scout with our ears, discussing in whispers and signs the sounds we could hear.

Mbendjele pay careful attention to the sounds of the forest and take pride in mimicking them precisely when recounting their day or chatting. When describing an encounter with a forest animal great attention is paid to the acoustic features of the event – lexical descriptions may be dropped for meticulous mimicry of the sounds of the encounter, from the thrashing of trees, to the calls or hoots of the animal that tell their forest-educated listeners all they need to know. There is a common vocabulary of characteristic sounds that are regularly incorporated into accounts and stories.

I call these characteristic sounds of encounters with animals ‘sound signatures’<sup>1</sup>. This is not onomatopoeia. The word for gorilla is onomatopoeic - ‘*ebobo*’. This sounds rather like the beautiful ‘*bobobobo*’ call gorillas make to know where group members are. However, the sound signatures used most often to represent gorillas are their warning barks – meaning ‘I passed near to a male gorilla’. Or the characteristic furious retching roar followed by the sound of thrashing bushes that means ‘I was charged by a silverback’. These represent the typical sounds of an encounter with male gorillas. Juveniles and females are rarely encountered since they tend to flee from people.

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<sup>1</sup> Sound signatures here refer to species specific sounds, not an individual’s specific sound.

Hearing these sound signatures while listening to peoples' accounts of their experiences both reminds and educates listeners. Younger listeners' attention is drawn to key warning sounds, and all are reminded of the actions behind the sounds, and what to do or not to do in response. This style of story-telling is especially cultivated by men on the secret *njanga* paths associated with their secret societies. In such exclusively male places men re-enact great hunting moments by making all the key sounds as exactly as possible, but also by performing the classic postures and moves of themselves and the animal as the tale unfolds. This is called *moadjo ya batopai*.

It is in these moments that the key tactics for approaching different prey animals are discussed and debated, subtle techniques for finding honey and other prized foods are shared, and the youth learn about the key postures and sounds animals and hunters make to guide them during forest encounters. It is in these ways that young men begin their apprenticeship in advanced hunting techniques.

By cultivating their listening skills Mbendjele have also developed their skill in mimicry. This skill is used to great effect to call animals to them. Men commonly fake animal calls to lure prey within range and view so they can shoot or spear them. I have seen men successfully call three species of duiker, numerous monkey species and crocodiles. Mbendjele men apply similar 'faking' principles to their strategies for obtaining goods from non-Mbendjele. So, when visiting neighbouring villagers they endeavour to get what they want at minimum cost and as safely as possible by playing up to the villagers' arrogant pretensions, claiming pity and speaking in the villagers' tongue.

### ***Learning Mbendjele***

Such attentiveness to the sound dimension of experience has consequences for

language that became evident early in my PhD field work when I began to learn Mbendjee. Different people would give me different words for the same object, different families would pronounce the same words very differently, men and women had different styles of talking, even children had certain words only they would use.

As my language ability improved so I could follow peoples' conversations, I noticed that their use of alternative words was often bound to context. Thus when recounting a visit to a Bongili farmers' village, the speaker would switch into Bongilised Mbendjee when talking about the village. When recounting a conversation with a Bongili the entire exchange would be recounted as much as possible in Bongili. If a speaker reached the limits of their knowledge of the language they simply mimicked the accent and typical expressions, and listeners would guess at the meaning from the words they did enunciate. In these accounts it was striking that Mbendjee seemed more concerned with mimicking the acoustics of the encounter than with conveying meaning lexically.

Although I had expected Mbendjee to fit my European concept of a language as something bounded, composed of a recognised set of words, belonging to a distinct population or speech community, I no longer do. It makes more sense to consider Mbendjee as something broad and all-embracing – a tool for establishing and maintaining social relationships with anything and anyone that might respond.

Cross's suggestion that 'music and language constitute complementary components of the human communicative toolkit' sits comfortably with the Mbendjee ethnography (Cross 2005; 2006). Following Mithen (2005), Cross argued that any evolutionary precursor would have expressed functions of music and language, rather than one or the other. Mithen's characterisation of compositional language as including arbitrary signs in addition to 'protolanguage' holistic,

manipulative, multi-modal, musical and mimetic aspects, describes Mbendjee well. The range of techniques - from hand signs, plant signals, whistles and other animal sounds, to human words and grammar, singing and ritualised dancing - that Mbendjele incorporate into their communicative toolkit also suggest that it may be useful to consider human communication broadly when hypothesising the emergence of language.

Mbendjee is an open, expansive communicative tool that imitates any other languages or meaningful sounds and actions that enable Mbendjele to interact with agents with whom they wish to maintain social relations. These agents can be other Mbendjele, villager neighbours, crocodiles, duikers, monkeys and other animals, and as I shall shortly describe, also the forest. Mbendjee could be described as ‘pre-Babel’ because it seeks to communicate as widely as is possible potentially incorporating everything that conveys meaning regardless of origin. Mbendjee seeks to communicate, at least in theory, with the whole world. In spite of this predatory approach to vocabulary and general openness to the new, linguists agree on classifying Mbendjee as a unique Bantu C10 group language<sup>2</sup> (Klieman 1997, 1999:90-1; Rossel 1999:109; Thomas 1979).

This has interesting parallels with observations of cultural openness among other African hunter-gatherers. Woodburn (1982: 448) characterised Hadza society as an open society, with no basis for excluding anyone. Lee commented that ‘the !Kung *consciously* strive to maintain a boundaryless universe because this is the best way to

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<sup>2</sup> Hombert described how Pygmies mostly speak the languages of their neighbours (2006). Although Mbendjele maintain relations with over thirteen different agriculturalist groups Mbendjee is not spoken by non-Pygmies (Lewis 2002: 52).

operate as hunter-gatherers' (1979: 335). Although he was referring to territory, it also applies rather well to how Mbendjele employ Mbendjee. Barnard, in his comparison of southern African Khoisan peoples remarked that Khoisan religious notions assimilate new ideas easily without significantly affecting the overall religious system (1988). Similarly, Mbendjee appears to assimilate new vocabulary from almost any source – plant, animal, human or a multi-organism such as the forest, somehow without losing its recognisable Mbendjee identity.

### ***The variety of speech styles***

The most intimate and limited style of speech is called '*ya miso minai*' – 'speech of four eyes'. This type of speech is the preferred style for communicating sensitive, secret, personal and profound subjects. It only occurs between two people. Such speech characteristically occurs in the forest and is whispered or muttered using a low tone of voice and monotone pronunciation. As the subject becomes more and more personal or sensitive speakers tend to omit consonants, leaving only tone and vowels, and multiple possible meanings, so that even if overheard it is very difficult to understand what has been said.

In camp by contrast, speech should be loud, melodious and punctuated by laughter and accompanying sounds and supportive refrains<sup>3</sup> from listeners. The respected elder Bokonyo would often remind us that one of the most important things that the 'people of before' asked the 'children of today' to do was to laugh a lot, and to like people who laugh a lot. A good camp (*lango manye*) should ring out regularly with laughter. Mbendjele cultivate their laughter so that it is distinctive and infectious, to assure that this is so.

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<sup>3</sup> Usefully described as 'overlapping utterances' by Kimura (2001; 2003; 2006).



In addition to supportive comments, listeners make other sounds that overlap with the speaker's utterances. Listeners use ideophones to express attitudes of approval or disapproval to what is being said. They use *iiiiiii* for surprise or disgust, *uuuuooooo* to accompany a dangerous or outrageous act, *iiiieee* to indicate pleasure, *uuuuaaaaarr* to indicate fear or impending catastrophe, and so on. In addition to using extended mimicry of the acoustic features of events and sound signatures, a speaker litters their talk with characteristic sounds that express particular actions or events; *bhuuuu* refers to arriving somewhere, *teeeeeeeee* to duration (length of utterance representing duration), *dtooo* to shooting and so forth.

### **Women's talk**

Although children, men and women all speak like this, the importance of laughter and humour, of timing and overlapping interjections, of tunefulness, rhythm, pitch and appropriate body language is most developed in women's speech styles. During the day when sitting in a group in camp chatting to pass the time women excel in animating the camp with this style of song-like and periodically raucous banter. Listening to them sometimes reminded me of a beautiful anthropomorphized bird-song. In the forest women regularly break into song, mostly yodelling, and substantially increase the volume when talking, ensuring they can be heard far away.

When women are resting together they often begin *besime ya baito* – women's chat. Though any situation of note can be discussed, women often focus on men's behaviour, particularly their husbands. In exaggerated tones with enthusiastic miming, accompanied by laughter, a wife can recount his misdemeanours to shame him. His fury will only encourage her, and other women will gang-up against him. Most men leave for a secluded place. Some good-humouredly join in and laugh. Occasionally it

ends in violence. Generally, Mbendjele men tolerate such explicit criticism if women do it, despite their embarrassment. When men do it, it causes serious fights.

The shaming element of such speech is central to women's power in society. In its most elaborate form women perform theatrical sketches that re-enact people's bad behaviour or a situation. This is *moadjo ya baito*. Recently, I saw some women use this to mock a grasping villager. The actors focused on key moments in their early morning encounter with him and repeated this many times. With repetition, his key expressions were mimicked increasingly well - with masterful attention to the eyes and stare, the mouth and accent, the gait and other traits. The results provoked hilarity.

In the early stages watchers reacted with the normal sung expletives that women use to accompany each others' speech. As the laughing and enactment proceeded they increasingly made comments such as 'liar!' or 'what hard hands!' (how tight-fisted or stingy) to underline the moral context of the humour. Younger girls were restrained in their comments, but laughed loudly. Older women quickly became boisterous, supporting the actors with jokes and offering humorous condemnation of mimicked behaviour. By the end of the show the women had mapped out the moral high ground: exposing the villagers' attempts to impose a moral universe of debt and labour as unjustified, unfair and contemptible. Such *moadjo* informally educates those present about Mbendjele moral values.

Widows have a special place in this type of humorous but directed criticism and are expected to do this in serious moments when tensions are high. A good performance will succeed in calming the atmosphere by allowing everyone to laugh and forget their anger. Indeed if the person being criticised is present, the *moadjo* will only end when they have laughed aloud. However, most often trouble-causers flee

when they see themselves becoming the centre of the camp's mirth, to hide in the forest until things calm down. This is suggestive of Eibl-Eibesfeldt's (1989: 138) hypothesis that laughter is derived from 'an old pattern of mobbing behaviour'.

In the Mbendjele's case, women demonstrate solidarity by colluding with the performers to mock skilfully and shame others by mobbing them with laughter. *Moadjo* enables women to make mimicry a powerful form of social control that imposes their moral authority over the rest of society.

### **Forest talk**

In the forest men communicate with each other and the forest's occupants in ways suggestive of communicative skills that could have given our hunting ancestors evolutionary advantages. Some techniques are meant to be understood, some to go unnoticed, and others are used to deceive.

As any tracker knows, plants speak. The way a plant is bent, broken or flattened, or the handling or feeding marks left on or around it, reveal much to an educated observer. Mbendjele imitate these plant signs and turn them into symbols they use to leave messages for each other. Camp movements are traced by leaves placed strategically on paths. Hunters pursuing prey snap over young saplings to mark their route so others may find them. Lovers bite distinctive patterns into certain leaves and put them at junctions so their lover may find them. Walkers are warned of trap-lines by bark slats jammed horizontally into split saplings, and so on.

Men out hunting use disguised modes of communication to maintain contact with each other without the animals knowing. For example, I recorded a variety of hand signals referring to animals, movement and activities, some of which are illustrated in figure I. These include signs for aardvark, bay duiker, bees, black-

fronted duiker, bongo antelope, buffalo, chimpanzee, crocodile, elephant, fish, gorilla, leopard, several monkey species, monkey eagle, porcupine, red marsh duiker, snake, tortoise and wild boar. For movement; 'go around it', 'over here', 'right here', 'stop!', 'marshy', and others such as 'I'm thirsty', 'I'm hungry', 'lay your head on my arm' (i.e. let's have sex), 'honey', 'drink', 'marijuana', and 'tobacco'. These and other signals are used outside hunting contexts, either alone or to add another, often secret, message over the one being spoken. Men especially use signs in farmers' villages to inform each other of the location of desirable goods such as tobacco, alcohol and marijuana, or to warn each other of problems. But most signing occurs during hunting.

When tracking or sensing the presence of game nearby men stop talking and simply sign to one another. Group spear-hunting techniques, such as the popular *bopfienga* style, depend on these disguised modes of communication. The *bopfienga* encirclement technique is used on herd animals such as pigs or large game such as buffalo and elephants. A group of men armed with spears wander in likely habitats until they notice the sounds or fresh traces of game. It is rarely productive to chase game directly since animals move faster than men through the dense undergrowth. Rather, hunters predict where they are likely to go next using their knowledge of the animals and resources around.

Silently and rapidly they move towards this area to prepare an ambush. If they were correct and the prey arrives, they fan out in carefully orchestrated movements silently encircling the prey. Sign language and fake bird-calls are crucial at this stage since all must know where the others are in order to prevent accidents when the action starts. During the wait and subsequent encirclement men only communicate in these ways. Each local group has its own characteristic bird or animal call that men

habitually fake. In this way they coordinate their movements without the prey being aware. If hunting pigs, when everyone is in position an experienced man signals before lunging forward to strike a boar and so scatter the other pigs towards the hidden hunters. They in turn strike out. Often several pigs are killed. This hunting style was a mainstay of the past, but is now increasingly replaced with shotgun pursuit.

Another context in which men use sound-making deceptively is in ritual languages. In addition to employing their own unique vocabulary, ritual languages disguise words from normal language by giving them new meanings only interpretable from the context of their use. Although men appear to have more ritual languages, this may reflect my ignorance since, as a man, I can not be initiated into the women's secrets. Men have distinctive vocabularies associated with particular secret societies, but these are too secret to divulge to the uninitiated.

Mbendjele love playing with signs, symbols and meanings. They excel in making one thing stand for another, even making the same thing stand for different things to different people, or to change meaning according to context, and to fake. They manipulate acoustic and physical symbols intelligently to communicate selectively, deceptively and generally, not according to a rigid grammar familiar to written languages, but with one flexible enough to structure and encompass a wide ranging vocabulary of words, utterances and actions from many sources, even from animals.

Men fake animal calls to lure animals to them. Most men competently fake many key animal sounds. I remember watching a group of men passing time deceiving a mother hen by so perfectly mimicking the chirping of her chicks that she would constantly attack them – to laughter and a gentle shove. Most young men

are capable mimics of bay duikers and blue duikers, both very abundant game and popular food. Faking the duikers call 'come frolic with me' brings them to within a few metres of the hunter. The confused animal can return again and again unable to understand why he is not meeting another duiker.

Monkeys are drawn out of the canopy into range of cross-bows or shot-guns by faking the sound of a fallen infant or the call of a monkey eagle. Faking a crocodile's mating call while standing waist deep in sludgy dark water and return calls gradually get closer requires courage. The crocodile is lured onto a small island in the marsh where prepared liana ropes are used to trap its jaws shut, before binding its limbs. Calling pigs is done when pigs are already close by and involves mimicking eating sounds so as to attract greedy animals close enough to be speared.

Mbendjele men have made mimicry an art-form. From plant marks to animal calls Mbendjele mimic diverse signs and sounds. They practise these in their spare time, pepper their speech with them, encourage their sons to learn, celebrate their successes and appreciate excellence. From leaving marks for other hunters, to using bird calls to encircle pigs unnoticed, or by calling duikers to frolic, mimicry facilitates hunting success.

There are some rare cases where non-human predators use sound to lure prey, but the sounds in question are normal sounds for that species to make. Their ability to lure prey is accidentally discovered. Thus cheetah's call their young using chirruping sounds that also happen to call certain birds towards them. Some bird-eating cheetahs are said to employ this as a hunting technique. Northern shrikes (*Lanius excubitor*) have been observed 'acoustically luring' prey birds such as small passerines (perching birds). The research provides no evidence for the intentionality of the practice, simply that it seems to work (Atkinson 1997).

Mbendjele hunters make excellent practical use of a key distinction (Tomasello 1999) between human and animal cognition: humans recognize the intentions behind an action or sound easily, but animals do not. As predators, this gives us certain advantages over prey that could have been critical in enabling modern humans to survive difficult or extreme periods in the past. Animals, such as duikers, have extreme difficulty recognizing that the hunter is lying. The techniques Mbendjele use are successful time and again because the animals concerned can not fake these sounds. Whereas animals make vocalisations according to context, humans can vocalise out of context, to trick, to lure or to tell a tale.

Mbendjele apply mimicry and deceit subtly and creatively in their predatory activities with humans too, at least where it works to increase success and reduce effort and danger. In relation to villagers, Mbendjele are willing to humiliate themselves from villagers' perspectives, to get what they want. Esakola, an elder Mbendjele man from Mobangui explained:

*“When you want to kill an elephant you must follow it. It is hard work and dangerous. You must smear its fresh excrement on yourself. It is the same for us with villagers!”*

Esakola expresses the perception that despite the initial discomfort of mimicking prey, it will result in the unspoken reward of elephant meat or farmers' goods. Smearing shit on one's self is equivalent to playing up to the expectations and conceits of the villagers. By theatrically mimicking villager's stereotypes of themselves, Mbendjele get things as safely as possible. This includes aping village customs and language, while appearing fearful, even stupid, mumbling shyly when spoken to, never looking in the eyes, behaving childishly, laughing inanely, praising and flattering, agreeing to whatever is suggested without any intention of doing more than is absolutely necessary, buffoonery and clowning. The key is to make villagers

feel superior, to make them feel like a patron, obliged to satisfy the pitiful Mbendjele's request. Köhler and Lewis (2002) discuss these relations in comparative perspective.

Amongst themselves Mbendjele frequently refer to the villagers as 'gorillas' because of their tendency to shout angrily at Mbendjele without good reason. As one man explained, just as gorillas charge up making terrifying noises when you accidentally tread on a twig while walking in forest they occupy, villagers do the same to Mbendjele, shouting a lot, becoming violent and dangerous, because you walked across their farm. Mbendjele insist that villagers are reborn as gorillas in their next lives. Using predatory techniques based on mimicry and deception to get things from villagers is acceptable because they are really gorillas. Once Mbendjele have got what they want they tend to drop the pretensions and will be quite normal with villagers, both polite and friendly. But if they don't get what they think they should have they can be rude and insulting (Lewis 2002: 231-2).

Using animal labels for groups of people and applying hunting techniques based on mimic and deception to get desirable things is indicative of the way that hunter-gatherers perceive of themselves as agents interacting with other natural agents (such as non-humans, plants and other humans) in nature, rather than subjects in a society somehow outside of nature. This has been usefully described as perceiving of the environment as a 'single social field' (cf. Bird-David 1990, 1992; Ingold 1994, 1996). From this point of view Mbendjele faking animal vocalisations is equivalent to speaking with people.

As sophisticated mimics, Mbendjele communicate with a range of agents who share their forest, using plant signs, fake animal calls, villager s' languages, customs and aping the ideas villagers hold about them. Between these 'spheres of involvement



there is no *absolute* separation, they are but contextually delimited segments of a single field.’ (Ingold 2000:47). For the Mbendjele the forest is their ‘single field’. Their relationship with it is total, expressed in the proverb, “An Mbendjele loves the forest as she loves her own body.”

### ***Singing without words as the most expansive communication***

Mbendjele are very concerned to please the forest. Although rarely expressed in ordinary talk, a common explanation given to me for many practices – such as why people tell stories in the evenings, or sing a lot – is that the forest likes it. When the forest is pleased it ‘opens’ the camp and all the things people need for a good life are easily available. Mbendjele, like other forest hunter-gatherers (Bird-David 1990; 1992), see the forest as abundant, ready to dispense resources as they are needed. The ‘people who came before’ (*bisi bosso*) showed the ‘children coming afterwards’ (*bana bambusa*) how to please the forest so that their camps remain open for food.

Most notably, they left behind *ekila* rules derived from symbolic elaborations around menstruation that serve to define gender roles, correct sharing and proper conduct. Doing *massana* of both play and ritual varieties and maintaining amiable relations between camp members is also important. As with other forest agents, it is the sounds coming from people in camp that indicate if camp life is good ‘*enye*’ or not ‘*mobe*’. These good sounds are of talk in the styles described above, of the laughter and song of good-humoured people telling stories, joking and doing *massana*.

This is contrasted to *motoko* - noise. The sounds of angry debate, of argument, of whingeing children, of people shouting aggressively, screaming or fighting, are all *motoko*. They are the product of discord, stress, pain, suffering, and an absence of cooperation or of sharing. Too much *motoko* leads to the camp ‘closing to food’.

When this happens camps split up and people go to different places. In the same way that Mbendjele listen to the forest in order to know about it, the forest listens to them to know about them. Just as animals respond to Mbendjele sound-making by fleeing, coming to them to facilitate capture or attacking them, so the forest provides abundantly or with-holds food according to the sounds it hears.

Likewise, Mbendjele listen constantly to the forest. Hearing sound signatures tells them who is there. The steady drone of bees returning to their hives at around 4pm indicates that it is time to stop tracking or whatever, and return to camp. If frogs are heard it means there is water to drink nearby, and so on. Recognising a monkey's 'saw a leopard' shriek from 'saw a pig' yell, or from 'found good food' scream all add to the texture of this conversation and provide important information. To listen so intently, and understand so much of what the forest tells you, turns being in the forest into a sort of communion, a constant conversation. The importance of this conversation has led to the elaboration of some sophisticated ritualised communication techniques intended to influence the forest positively.

Mbendjele systematically attribute intentions to animals, quite commonly anthropomorphising them in fables and story-telling. Intentions are attributed to their sound-making. So Kata would systematically break into howls of laughter whenever he heard the tree-hyrax's sexually desperate-sounding mating call. Or one night Emeka swore furiously, threatening a silverback gorilla who repeatedly barked at us for camping too close. From an Mbendjele point of view, their acoustical interaction with the forest is a conversation with a complex multi-agent organism we call a forest.

This forest soundscape is ever-present. Every creature has its contribution to make, and many coordinate with each other, as cicadas seem to on a warm afternoon. When creatures contribute they do so with their whole bodies, with all their might,

they seem to live the sounds they make. A small bird in the undergrowth puffs his chest and chirrup his tune, then pauses before repeating the performance. Cicadas and grass-hoppers rub their hard washer-board legs against their abdomen, and other insects with similar sound-making abilities, repeat their different sounds over their own unique period. Other creatures join this overlapping and intertwining soundscape at their own pace and rhythm; monkeys here, birds there, tree hyrax and so on.

When people really want to charm the forest they turn their part of this conversation into a song, a song which involves their whole bodies, and mimics the forest back to itself. This is done using percussion, polyphonic singing and dancing. The people who came before established particular ways of doing this called *mokondi massana*. There are many styles of *mokondi massana*, each with its characteristic repertoire of melodies, songs, clap and drum styles and different ways of dressing (or not) the mystical forest creatures called *mokondi* so that they come safely into camp. I shall shortly describe this in more detail, but should first introduce *massana* activities.

Both children and adults should play regularly at *massana*. This is crucial for keeping the camp open to food. It is also the major avenue for Mbendjele to learn the key skills that they require to live well in the forest (Lewis 2002: 124-195). *Massana* activities range from any children's play that involves groups of children cooperating together to play and have fun – from games like 'tag' or pretending to dig for yams, to making 'play' huts, or spearing slices of a banana plant rolling along the ground. In these contexts younger children learn to observe and mimic older or more skilled children with the intention of becoming skilful themselves. When done in a light-hearted and supportive atmosphere they cultivate expertise by becoming increasingly aware of the intentions behind the other's actions. Learning is implicit and self-motivated. The egalitarian ethos of Mbendjele society makes overt instruction

potentially offensive since it implies power differences.

Older children's *massana* activities include more sophisticated and structured role-play games that require high levels of coordination and cooperation to work. Hunting games now involve groups of boys mimicking animals while others mimic hunters laying an ambush, 'play' camps now also have hearths to roast food, or tree-climbing games that use the participants combined weight at the top of a supple young tree to bend it over, when all but one let go. The one left is taken on a high-speed, high-thrill spring back to upright (see Lewis 2002: 124-136 for more examples).

These styles of playful cooperative merriment in complex coordinated activities are at their most sophisticated in *mokondi massana* rituals involving complex polyphonic singing. When the group achieves the synergistic harmony familiar to good choirs or orchestras, the forest shows its pleasure by allowing the mysterious forest spirit-creatures called *mokondi*, sometimes embodied as leafy dancers, sometimes simply experienced as an ambience, to enchant the participants and further deepen the profound *communitas* they experience.

While forming a continuum with children's play for Mbendjele, *mokondi massana* have been the subject of considerable outside interest, both locally and from abroad<sup>4</sup>, due to the spectacular beauty of such performances. Locally, Pygmies are so reputed for their ritual skill that they conduct all the major community rites for their villager neighbours. They are considered the most expert singers, dancers and musicians of the region. Despite Pygmy groups speaking different languages, they sing in a similar polyphonic style and organise their rituals along similar principles

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<sup>4</sup> Olivier and Fürniss (1999: 117 fn. 1) list ethnomusicological accounts of Aka (Mbendjele) music and Feld (1996) of the many exports of it into contemporary western music.

and institutions – mostly gendered secret societies (Lewis 2002: 29-31).

During the musical performances of *mokondi massana* the whole camp assembles in the central space. People sit in gender groups, close together with shoulders touching and limbs resting on each other. As their bodies intertwine, so too do their voices - singing out different melodic lines that overlay each other to constitute the polyphonic song. Like each creature of the forest, each melodic line is different and has its own period, and combines itself with other melodic lines, some with different periods. Typically each gender has its characteristic melodic lines, though they may also sing each others' lines from time to time. Singers switch melodies when they hear too many singers singing the same one, and people seem to improvise freely.

However, there are rules that govern how the polyphony progresses, what innovations are possible and what is appropriate participation, as Arom (1985), Demolin (2006) and Fürniss (1993) have shown. There is also much to be made of the continuities between how such singing and associated rituals are organised and the organisation of social life in general (Arom 1978; Lewis 2006). But here I wish to emphasise how by singing in this way Mbendjele are playfully mimicking the forest's sound<sup>5</sup>, while contributing a uniquely human aesthetic to it that pleases the forest. Just as the forest's song is composed of the forest creatures each calling out in their own time with their unique sound, so too is Mbendjele polyphonic singing.

Many polyphonic songs belong to distinctive repertoires associated with

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<sup>5</sup> Nigerian superstar Fela Kuti used instruments such as the saxophone to mimic typical Lagos traffic sounds: horns tooting, tyres skidding, engines revving. Like Pygmy polyphonic singing, both employ environmental mimicry as the basis for music-making.

particular forest spirits (*mokondi*). When the assembled Mbendjele doing *mokondi massana* get the song just right the forest sometimes shows its joy by allowing leafy dancers called *mokondi* to approach the singers and dance for them. When this is done well *massana* may go on through the night with participants entering euphoric trance states. In these performances, as participants melt into their neighbours sitting overlapping with them, so they also melt into the mass of sound they create. It is easy to lose oneself into this physical and acoustic mass and experience profound *communitas*. When done with excellence, as demonstrated when *mokondi* appear, the group experiences *communitas* with the forest.

Arom (1987: 24) characterised Pygmy polyphonic singing as ‘pure’ music because the melody is not subjugated to words. Actually, Mbendjele songs are not to be understood because of words they use from human language but through the acoustic form they have adopted based on the forest’s ‘language’. In a sense, their melodies are the forest’s ‘words’. This may explain why polyphonic singing is characteristic of Pygmies throughout the Congo Basin<sup>6</sup>. It enables them to commune and communicate with the entire forest, themselves included, by mimicking its sound back to itself. If one wanted to speak to the forest, what other language could be used?

Just as dancing is the most sophisticated form of walking, singing is the most sophisticated form of talking. So singing and dancing are the most inclusive and expansive forms of communicating<sup>7</sup>, encompassing all the forest’s inhabitants. The

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<sup>6</sup> This ubiquity also extends beyond singing and musical styles: see for instance Arom 1978; Bahuchet 1992; Hewlett and Cavalli-Sforza 1986; Kazadi 1981: 836; Lewis 2002: 53- 70; Thomas 1979: 145; Turnbull 1966: 23.

<sup>7</sup> This resonates with Demolin’s comparison of language skills with those required for vocal music that shows that more are required for music than speech (2006), as does

notion that song is an aspect of communication is not new, but is particularly relevant for appreciating African religions. Senghor eloquently expressed this: ‘En Afrique noire, c’est la musique qui *accomplit* la parole et la transforme en *verbe*, cette invention supérieure de l’homme qui fait de lui un *démiurge*.<sup>8</sup>’ (1964: 238, quoted in Arom 1985: 49).

Arom emphasised the role of music in Central African religions as one of communicating with the spirits and enlisting their help (1985: 40-48). This, he argued, explains the strictness of rules about who can sing or dance in particular contexts, and that this music is better understood as a rhythmic utterance. The intended recipient of the Mbendjele’s rhythmic utterances is the forest as an organic whole, of which people, spirits and animals as well as plants are all part. Thus, in *mokondi massana* the Mbendjele are the forest singing to itself. When communication is effective people know it because they experience the *mokondi* spirits, whether they are embodied or not.

### ***Some considerations for theories of the origins of language***

The Mbendjele are particularly interesting because they use so many different techniques to communicate; some are intended to be understood, others to deceive or avoid being understood, and some to be noticed only by the intended recipients. The

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the data from brain imaging suggesting that music generation and perception tasks require larger networks (both hemispheres) than similar language tasks (left hemisphere) Parsons (2006).

<sup>8</sup> Author’s translation: *In black Africa it is music that completes the speech act by transforming it into a verb, this superior invention of man is what makes him a divinely creative force.*

range of symbols they exchange in these endeavours is also illuminating. From bent-over saplings, whistles and hand signals to animal sounds, singing and lexical exchange, Mbendjele use whatever communicative mode is most effective for achieving their aims. In lexical exchanges meanings can be layered by the combination of words, sounds and signs, words may be intended to mean one thing to some listeners and something else to others and comprehensibility is controlled by the degree to which consonants are dropped. Mbendjee speakers are able to communicate with each other, with their neighbours, with forest animals and the whole forest.

The breadth of Mbendjele communicative practices are ‘good to think with’ in imagining scenarios for the origins of language not because they are primitive, they are clearly modern, but because of the extent to which the human communicative potential is explored in these practices and what this implies. This diversity seems to be largely accounted for by the Mbendjele’s inventiveness and mimetic interaction with their dense forest environment, and their efficacy as hunters of a wide range of animals, including large, dangerous mammals. The Mbendjele’s unconventional predation of vocabulary and communicative techniques from all around them challenges our Saussurian bias to presume that the links between sounds and meanings in any language should be arbitrary. The evidence presented here suggests that the human ability to mimic these various phenomena ‘out of context’ may be more revealing in relation to the question of the origins of language, than an exclusive focus on the relations between arbitrary signifiers.

Brent Berlin’s work on the role of onomatopoeia and sound synaesthesia (phonoaesthesia) in determining suitable names for things (especially 2005; 2006) is relevant here. Berlin suggested that ‘non-arbitrary sound-symbolic, phono-mimetic reference must have had enormous adaptive significance for our hominid



ancestors...that the intuitively plausible and metaphorically motivated principles of phonoaesthesia served to drive lexicon in general' (2006: 49). This work suggests that animal names, for instance, often reflect inherent properties of the animals concerned - whether these are sounds they make, their size or how they move - and that the arbitrary link between an entity and its name so central to much linguistic theory is not a universal feature of language. Additionally, Ramachandran and Hubbard show that the activity of phonoaesthesia so central to intuitive lexicon appears to be based on cross-sensual mimicry – from the senses to movements of the tongue on the palate (2001:19).

The Mbendjele ethnography demonstrates a broad range of mimetic practices. *Massana* highlights the key role of playful, intentional mimicry and cooperative imitation in human learning, creativity, development, and religious experience. The linguistic manifestation of mimicry's creativity is exemplified in the range of the Mbendjele's communicative utterances and actions. In the context of conflict, Mbendjele women use mimicry very effectively to humble antagonists and reinstate social harmony. This range of mimetic practice is suggestive of ways that mimicry can drive lexicon, and how it might have contributed to the early establishment of what Knight (2006) called 'the rule of law'. For arbitrary signs to communicate meaning, people must agree to adopt linguistic conventions and categorisations, and play the language game honestly - to share sociality (Steels 2006). Mimicry out of context may have had a key role in both lexicon development and enforcing the 'rules of the social game'.

Mbendjele language freely interchanges vocal and visual signs and symbols ranging from full iconicity to total arbitrariness. These signs and symbols are copied or mimicked from fellow Mbendjele, plants, animals, other peoples' languages or the

forest soundscape, and recombined regardless of context according to what will most effectively achieve particular goals. As Knight (2000: 100) argued citing Givón (1985: 214), we should treat iconicity as ‘the truly general case in the coding, representation and communication of experience’, arbitrarily constructed words are an ‘extreme case on the iconic scale’. Mbendjee provides a good example of this.

Knight emphasised life-long play as key to the evolution of language because it encourages symbolic behaviour. Play depends on participants doing things ‘out of context’, agreeing to ‘pretend’ that something is not what it seems – ‘that nip is not a bite’ or ‘this stick is a horse’. Amongst primates, only humans maintain the ability to play throughout adulthood. This lifelong ‘pretending’ has established a propensity to engage in symbolic communication and language-like activities that has led to, among other things, the arbitrary Saussurian sign (Knight 2000).

‘Faking’ (intentionally deceptive mimicry) and ‘pretending’ (playful mimicry) are related. This is suggestive of the possibility that early humans’ language-like behaviour began with intentionally deceptive mimicry to facilitate hunting success. Thus early language-like behaviour might have initially evolved not for in-group communication but for deceiving other species. A secondary in-group use for fake vocalisations could have then emerged in the context of play and other interactions, possibly in early story-telling using sound signatures, for instance.

Humans are unusual primates for being such expert predators, yet our physique is poorly equipped for such activities. No large canines or sharp claws for example. Of interest when imagining the situation for early human hunters, the Mbendjele demonstrate the advantage of diverse modes of communication to facilitate spear-hunting herd animals and big game - from faking animal vocalisations to signing and whistling, and using speech to plan and organise hunters working in a

group. The widely acknowledged status of Pygmies as the master elephant hunters of the Congo Basin suggests that the advantages these techniques give them go beyond the technology at their disposal, which is also available to other local groups. These other groups only exceptionally spear hunt big game. Instead they depend on Mbendjele and other Pygmies to do it for them.

This suggests that a significant contributor to selection for language-like behaviour was that it gave survival advantages to hominids that depended on hunting and specialised in big game hunting. Understanding the intentions of both fellow hunters and prey animals, particularly when they are large, intelligent and dangerous animals such as elephants, offers clear evolutionary advantage if one's survival depends on killing them.

As the ability to anticipate and to judge intentions develops through natural selection for big-game hunting success, so the use of mimicry transforms from one of incidental imitation to one of intentional manipulation as hunters increasingly appreciate the intentions behind the sounds and actions of animals and use these to hunt them more efficiently. In particular they begin to fake animal vocalisations to call prey to them, to use animal sounds or plant signs to communicate secretly with one another and more easily outwit prey when group-hunting, or to use gesture and other non-verbal abbreviations to communicate silently in the presence of prey. It is a small step to use these same vocalisations and gestures to communicate within the group – for instance in describing a significant event or explaining an accident when back at camp.

If this were so, it might be plausible to suppose that language evolution accelerated at times when hunting was particularly difficult and survival precarious. The Penultimate Glacial between 190,000 and 130,000 years ago, when emerging

modern humans were competing intensively for resources in the few inhabitable refuges left in Africa, would certainly have been such a time. Similar pressures would have existed during the Last Glacial (74,000 to 12,000 years ago), most particularly when it began and modern humans still inhabited Africa. Hunting difficulty may have accelerated selection for the key skills (reading intentions, environmental mimicry and faking animal vocalisations) that promoted the use of increasingly arbitrarily coded signs in communication between people.

Based on McBreaty and Brooks' (2000) examination of the archaeological evidence from Africa for the emergence of what he calls 'human cognitive fluidity', Mithen (2007: 117) postulates the slow emergence of language from 200,000 years ago to the dominance of compositional language in human communication around 70,000 years ago in Africa. This accords with what would be expected if hunting, mimicry, faking and play had a crucial role in the evolution of language. The onset of the ice ages must have established particularly severe selective pressures on our hunting ancestors.

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## **References**

- Arom, S. (1978). Linear notes to the music disc 'Centrafrique, Anthologie de la Musique des Pygmées Aka'. *Radio-France*, 558-526 / 27 / 28.
- (1985). *Polyphonies et Polyrythmies instrumentales d'Afrique Centrale. Structure et Methodologie, volume 1 and 2*. Paris: SELAF.
- Atkinson, E. C. (1997). 'Singing for your supper: Acoustical luring of avian prey by northern Shrikes', *The Condor*, **99** (1), 203-206.
- Bahuchet, S. (1992). 'Spatial Mobility and Access to Resources among the African Pygmies', in M.J. Casimir and A. Rao (eds.), *Mobility and Territoriality. Social and Spatial Boundaries among Foragers, Fishers, Pastoralists and Peripatetics*. Oxford: Berg Publishers, 205-257.
- Barnard, A. (1988). 'Structure and Fluidity in Khoisan Religious Ideas', *Journal of Religion in Africa* 18 (3), 216-36.
- Berlin, B. (2005). 'Just another fish story? Size-symbolic properties of fish names', in A. Minelli, G. Ortalli & G. Sanga (eds.), *Animal names*. Venice: Istituto Veneto di Scienza, Lettere ed Arti, 9-21.
- (2006). 'The First Congress of Ethnozoological Nomenclature', in R. Ellen (ed.), 'Ethnobiology and the Science of Humankind', *Journal of the Royal Anthropological Institute, Special Issue No 1*, 29-54.
- Bird-David, N. (1990). 'The Giving Environment: Another Perspective on the Economic System of Gatherer-Hunters', *Current Anthropology* **31** (2): 189-196.
- (1992). 'Beyond "The Original Affluent Society", a Culturalist Reformulation', *Current Anthropology* **33** (1): 25-47.
- Cross, I. (2005). 'Music and meaning, ambiguity and evolution', in D. Miell, R.

- MacDonald & D. Hargreaves (eds.), *Musical Communication*. Oxford: OUP, 27-43.
- (2006). 'The evolutionary nature of musical meaning', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.
- Demolin, D. (2006). 'The evolution of language and music in comparative perspective', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.
- Eibl-Eibesfeldt, I. (1989). *Human Ethology*. Hawthorne, New York: Aldine de Gruyter.
- Feld, S. (1996). 'Pygmy POP. A Genealogy of Schizophonic Mimesis', *Yearbook for Traditional Music* 28: 1-35.
- Fürniss, S. (1993). 'Rigueur et liberté: la polyphonie vocale des pygmées Aka (Centrafrique)', in C. Meyer (ed.), *Polyphonies de tradition orale. Histoire et traditions vivantes*. Paris: Créaphis, 101- 131.
- Givón, T. (1985). 'Iconicity, isomorphism and non-arbitrary coding in syntax', in J. Haiman (ed.), *Iconicity in Syntax*. Amsterdam and Philadelphia: Benjamins, 187-219.
- Hewlett, B. and L. Cavalli-Sforza. (1986). 'Cultural Transmission Among Aka Pygmies', *American Anthropologist* 88: 921-934.
- Hombert, J-M. (2006). 'The paleolinguistic situation of the African continent', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.
- Ingold, T. (1994). 'From trust to Domination: An Alternative History of Human-Animal Relations', in A. Manning and J. Serpell (eds.), *Animals and Human*

- Society: Changing Perspectives*. London: Routledge, 1-22.
- (1996). 'Hunting and Gathering as Ways of Perceiving the Environment', in R. Ellen and K. Fukui (eds.), *Redefining Nature: Ecology, Culture and Domestication*. Oxford: Berg, 117-155.
- (2000). *The Perception of the Environment. Essays on livelihood, dwelling and skill*. London: Routledge.
- Kazadi, N. (1981). 'Méprises et Admires: L'ambivalence des Relations entre les Bacwa (Pygmées) et les Bahemba (Bantu)', *Africa* **51** (4): 836-847.
- Kimura, D. (2001). 'Utterance overlap and long silence among the Baka Pygmies: Comparison with Bantu farmers and Japanese university students', *Africa Study Monographs Supplementary Issue* **26**: 103- 121.
- (2003). 'Bakas' mode of co-presence', *Africa Study Monographs Supplementary Issue* **28**: 25- 35.
- (2006). 'Diversity of human verbal interaction: Two cases from tropical Africa', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.
- Klieman, K. (1997). *Hunters and Farmers of the Equatorial Rainforest: Economy and Society, c. 3000 B.C. to 800 A.D.* Ph.D. Thesis. University of California.
- (1999). 'Hunter-gatherer Participation in Rainforest Trade-Systems: a Comparative History of Forest vs. Ecotone Societies in Gabon and Congo, c. 1000-1800 A.D.', in K. Biesbrouck, S. Elders and G. Rossel (eds.), *Central African Hunter-gatherers in a Multidisciplinary Perspective: Challenging Elusiveness*. CNWS, Universiteit Leiden, 89-104.
- Knight, C. (2000). 'Play as a Precursor of Phonology and Syntax.' In *The Evolutionary Emergence of Language: social function and the origins of*

*linguistic form*. C. Knight, M. Studdard-Kennedy and J. Hurford (eds.).

Cambridge: Cambridge University Press.

--- (2006). 'Language, ochre and the rule of law', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.

Köhler, A. and J. Lewis, (2002). 'Putting Hunter-Gatherer and Farmer Relations in Perspective. A Commentary from Central Africa'. In S. Kent (ed.) *Ethnicity, Hunter-Gatherers, and the 'Other': Association or Assimilation in Southern Africa?* Washington: Smithsonian Institute, 276-305.

Lee, R. (1979). *The !Kung San: Men, Women and Work in a Foraging Society*.

Cambridge: Cambridge University Press.

Lewis, J. (2002). 'Forest Hunter-Gatherers and their World: A Study of the Mbendjele Yaka Pygmies and their Secular and Religious Activities and Representations', PhD Thesis: University of London.

--- (2004). 'Whose Forest is it anyway? Mbendjele Yaka Pygmies, the Ndoki Forest and the Wider World', in T. Widlok and W. Tadesse (eds.), *Property and Equality, Vol. 2 Encapsulation, Commercialisation, Discrimination*. New York and Oxford: Berghahn Books, 56-78.

--- (2006). 'Deconstructing Pygmy Polyphonies' and update to the section on 'Pygmy Music. Songs from the Forests of the Congo Basin'. In S. Broughton, M. Ellingham and J. Lusk with D. Clark (eds.), *The Rough Guide to World Music, Africa and the Middle East*. London and New York: Rough Guides, 304-312.

Forthcoming (2008). 'Ekila. Blood, Bodies and Egalitarian Societies', *Journal of the Royal Anthropological Institute*.

McBrearty, S and Brooks, A. (2000). 'The Revolution that wasn't: a new interpretation of the origin of modern human behaviour', *Journal of Human Evolution* 38,



453-563.

Mithen, S. (2005). *The Singing Neanderthals: the Origins of Music, Language, Mind and Body*. London: Weidenfeld and Nicolson.

--- (2006). 'The Co-evolution of Music and Language', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.

--- (2007). 'Music and the Origin of Modern Humans', in P. Mellars, K. Boyle, O. Bar-Yosef and C. Stringer (eds.), *Rethinking the Human Revolution*. Oxford: Oxbow books.

Olivier, E. and S. Fūrniiss. (1999). 'Pygmy and bushman music: a new comparative study', in K. Biesbrouck, S. Elders and G. Rossel (eds.), *Central African Hunter-gatherers in a Multidisciplinary Perspective: Challenging Elusiveness*. CNWS, Universiteit Leiden, 117- 132.

Parsons, L. (2006). 'New functional and structural brain evidence apropos the evolution of language, deduction, and music facilities', paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.

Ramachandran, V.S. and E.M. Hubbard, (2001). 'Synaesthesia: A window into perception, thought and language', *Journal of Consciousness Studies*, 8, 3-34.

Rossel, G. (1999). 'Crop names and the history of hunter-gatherers in northern Congo', in K. Biesbrouck, S. Elders and G. Rossel (eds.), *Central African Hunter-gatherers in a Multidisciplinary Perspective: Challenging Elusiveness*. CNWS, Universiteit Leiden, 105- 116.

Sawada, M. (1990). 'Two Patterns of Chorus among the Efe Forest Hunter-Gatherers in North-Eastern Zaire – Why do they Love to Sing?', *African Study Monographs*, **10** (4): 159-195.

- Senghor L. S. (1964). *Liberté I. Négritude et humanisme*, Paris: Editions du Seuil, (1st edition 1958).
- Steels, L., (2006). 'Sociality is a crucial prerequisite for the emergence of language' paper presented at the Cradle of Languages Conference, Stellenbosch, South Africa, November 2006.
- Thomas, J.M.C. (1979). 'Emprunt ou Parenté? A Propos des Parlers des Populations Forestières de Centrafrique', in S. Bahuchet (ed.), *Pygmées de Centrafrique. Ethnologie, Histoire et Linguistique. Études Ethnologiques, Historiques et Linguistiques sur les Pygmées 'Ba.Mbenga' (Aka/Baka) du Nord-Ouest du Bassin Congolais*. Paris: SELAF/Louvain Peeters, 141-169.
- Tomasello, M. (1999). *The cultural origins of human cognition*. London: Harvard University Press.
- Tomasello, M., M. Carpenter, J. Call, T. Behne, & H. Moll. (2005). 'Understanding and Sharing Intentions: The Origins of Cultural Cognition', *Behavioral and Brain Sciences*, **28**(5): 675-691.
- Turnbull, C. (1966). *Wayward Servants. The Two Worlds of the African Pygmies*. London: Eyre and Spottiswoode.
- Woodburn, J. (1982). 'Egalitarian Societies.' *Man, the Journal of the Royal Anthropological Institute*, **17**, no. 3: 431-51.