

IN: Y. CUMMINGS P. JORDAN AND
M. ZVELEBIL. 2014. THE OXFORD
HANDBOOK OF THE ARCHAEOLOGY AND
ANTHROPOLOGY OF HUNTER-GATHERERS
OXFORD, UK: OXFORD UP
CHAPTER 44

CENTRAL AFRICAN HUNTER-GATHERER RESEARCH TRADITIONS

BARRY S. HEWLETT AND JASON M. FANCHER

THE largest remaining groups of mobile hunter-gatherers on earth live in central Africa. More than 350,000 foragers from at least 13 distinct ethnolinguistic groups occupy Congo Basin forests. Historically, these groups have been referred to as 'Pygmies' and no alternative term has emerged to replace that. Researchers actively debate whether or not to use the term 'Pygmy' in their publications. Some prefer the term because the public and non-specialist academics recognize it, or their publications get more attention if this term is used, while others feel it is derogatory. Political activist and development agencies do not hesitate to use the term. We take the position that reference to stature may not be derogatory, but it is denigrating the way it is used by farmers living in association with foragers. The term 'Pygmy' also tends to give the impression of a unified culture or ethnic group. In this chapter we use the names of specific ethnic groups when possible or refer to all groups as Congo Basin foragers or forest foragers. It is important to note that many Congo Basin foragers today farm, and that many of them are not short (e.g. Bongo and other groups in Gabon).

The chapter is divided into three parts. A brief overview of the ethnic groups and their genetic relationships is provided before we briefly examine the personal backgrounds and research trajectories of leading researchers from four national anthropological traditions. The Congo Basin has attracted particular kinds of researchers and these researchers have influenced how Congo Basin peoples are represented. Finally, major topical and theoretical issues in Congo Basin forager research are identified and critiqued, and we conclude with suggestions for future research.

WHO ARE THE CONGO BASIN FORAGERS?

Profound linguistic, cultural, and biological (genetic) diversity exists between ethnic groups (Hewlett in press). Figure 44.1 identifies the general location of the largest groups

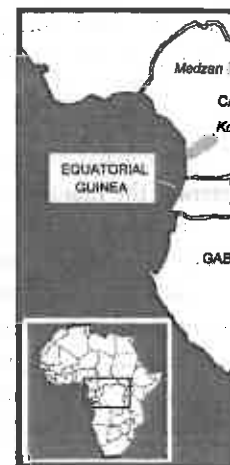


FIGURE 44.1 The gene

Table 44.1 Major etl

Ethnic group
Aka (Mbenzele dialectal su
Asua
Efe
Baka (known as Bangomb
some areas)
Bofi
Bongo (also known as Aka
Kola (also known as Gyeli
Mbuti-Sua
Medzan (also known as Ti
Nsua
Twa (Ntomba region)
Twa (Kasai region)
Twa (Rwanda and Burund

and Table 44.1 gives th
larger or better-docum
been documented. For:
agers and Bolimba fora;
have not been describ

Research on Congo l
worth noting that some

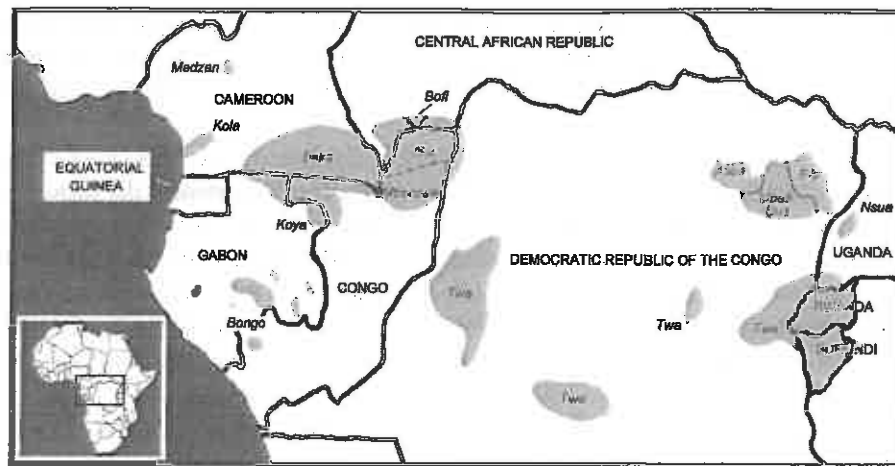


FIGURE 44.1 The general location of the largest groups of Congo Basin hunter-gatherers.

Table 44.1 Major ethnolinguistic groups of Congo Basin hunter-gatherers

Ethnic group	Approximate population	Linguistic family
Aka (Mbenzele dialectal sub-group)	35,000	Bantu
Asua	3,000	Sudanic
Efe	10,000	Sudanic
Baka (known as Bangombe in some areas)	40,000	Oubangian
Bofi	3,000	Oubangian
Bongo (also known as Akoa)	2,000	Bantu
Kola (also known as Gyeli)	3,500	Bantu
Mbuti-Sua	7,500	Bantu
Medzan (also known as Tikar)	250	Bantu
Nsua	1,000	Bantu
Twa (Ntomba region)	14,000	Bantu
Twa (Kasai region)	Unknown	Bantu
Twa (Rwanda and Burundi region)	10,000	Bantu

and Table 44.1 gives the names, approximate population size, and linguistic family of the larger or better-documented groups. Several other ethnic groups exist but they have not been documented. For instance, in the Central African Republic we are aware of Mbuti foragers and Bolimba foragers, but their distributions, population sizes, histories, and cultures have not been described.

Research on Congo Basin foragers emphasizes understanding cultural diversity, but it is worth noting that some aspects of Congo Basin forager cultures are relatively similar. First,

SEARCH

ANCHER

h live in central Africa
c groups occupy Congo
mies' and no alternative
er or not to use the term
iblic and non-specialist
this term is used, while
es do not hesitate to use
erogatory, but it is deni-
gers. The term 'Pygmy'
). In this chapter we use
ps as Congo Basin for-
in foragers today farm,
Gabon).

ethnic groups and their
sonal backgrounds and
ropological traditions.
these researchers have
topical and theoretical
and we conclude with

AGERS?

exists between ethnic
1 of the largest groups

like mobile foragers in other parts of the world they lack strong leaders and food storage; gender and age egalitarianism, extensive sharing, and respect for autonomy are foundational cultural values; fertility and mortality are relatively high; camp sizes average 25–35 individuals; and seldom do they engage in warfare or raiding.

Second, Congo Basin forager cultures are profoundly diverse, but some cross-cultural similarities, which some may call a culture core, exist. Most importantly, the majority of groups have a strong identity and association with the forest. Some groups may live in savannah or mixed savannah-forest environments (e.g. Bofi foragers or Medzan), but the people's knowledge and identity are generally associated with the forest. Other elements of the culture core include: similar terms for several forest plants and animals (Bahuchet 1992a), distinctive polyphonic music (Fürniss 1993), pronounced allomaternal care (cooperative care of children by individuals other than their biological mothers; Hewlett 1991; Meehan 2005), and multidimensional (e.g. social, economic, religious) relationships with farmers.

ORIGIN AND STATURE

This review does not cover biological anthropology and archaeology, but we want to briefly mention two recent areas of research that have generated considerable public and academic attention—what their origin is and why they are short. Recent phylogenetic studies (Batini et al. 2007; Patin et al. 2009; Quintana-Murci et al. 2008; Verdu et al. 2009) indicate that ancestral populations of Congo Basin foragers and farmers diverged about 60,000 years BP. This implies that the original divergence was not based on subsistence as both ancestral groups would have been foragers at this time because farming in central Africa did not emerge until 5000 BP. It is hypothesized that dramatic variability in African climate between 100,000 and 60,000 BP led to cultural innovations, population growth, and movements of peoples within and out of Africa. Genetic data also indicate that eastern (e.g. Mbuti and Efe) and western (e.g. Aka and Baka) Congo Basin foragers diverged about 20,000 BP, which suggests that the commonalities in culture described above are a result of shared history rather than convergent adaptation to the tropical forest. The timing of the separation is hypothetically linked to the Last Glacial Maximum, which led to a massive retreat of the Congo Basin forests as rainfall declined up to 50 per cent. Finally, the genetic data also indicate a relatively recent common origin of all western forager groups (about 2500 BP) and substantial gene flow between western Congo Basin foragers and farmers. Verdu et al. (2009) hypothesized that the western group's divergence was linked to the Bantu expansion, which occurred about the same time; i.e. Bantu farmers' relationships with foragers decreased mobility and increased the isolation of forager groups.

Another long-standing question within biological anthropology is 'Why are Pygmies short?' (Cavalli-Sforza 1986; Diamond 1991). Previous studies suggested short size was a thermoregulatory or other adaptation to the tropical forest or that nutritional shortages led to the short stature, but Walker et al. (2006) used life history theory to explain diversity in human stature, suggesting that short stature could be selected for in a context of high mortality. Migliano et al. (2007) tested the hypothesis among Pygmies, but their data and interpretation of life history theory were problematic (Becker et al. 2010).

PERSONA

Before we examine research sketches of the most of their personal interests a questions and how Congo 50 years, i.e. since 1960.

British Traditions

Colin Turnbull (1961) (for book chapters on Congo est foragers because of his research with the Mbuti i pology courses.

Turnbull was trained as graduate he majored in p students. After completin Hindu University in Ind ally received an MA in Ir where he started on a mo in African music and enc hotel run by Patrick Puti nographic research with t month in the field. He wa: construct the boat used in

He returned to the UK graduate school and decid not as science-oriented as to MA in the US) he surv was critical of Father Paul to test Father Schmidt's (1 primitive human circle, a live in Mbuti camps and l Efe. Schebesta said Efe h villagers. Based upon his l tions and returned to the l

Turnbull was trained Evans-Pritchard, classic l had to pay attention to sc ing a Buddhist monk late inner lives of the people. l

PERSONAL TRAJECTORIES AND NATIONAL RESEARCH TRADITIONS

Before we examine research issues in Congo Basin forager research, we provide biographical sketches of the most prolific Congo Basin forager ethnographers. An understanding of their personal interests and academic backgrounds provides insights into research issues/questions and how Congo Basin foragers are represented. We focus on research in the last 50 years, i.e. since 1960.

British Traditions

Colin Turnbull (1961) (four monographs and first author on over 15 journal articles and book chapters on Congo Basin foragers) is probably the most recognized scholar of forest foragers because of his best-selling book, *The forest people*. Even though it is based on research with the Mbuti in the 1950s it is still a popular text in some introductory anthropology courses.

Turnbull was trained as a British social anthropologist at Oxford University. As an undergraduate he majored in politics and philosophy and spent considerable time with Indian students. After completing his undergraduate degree he received a scholarship to Banaras Hindu University in India to study religion with two famous Indian saints and eventually received an MA in Indian Religion and Philosophy. From India he travelled to Kenya where he started on a motorcycle journey across Africa with a friend. They were interested in African music and ended up in the Ituri forest in what was then the Belgian Congo at a hotel run by Patrick Putnam, a Harvard-trained anthropologist who had conducted ethnographic research with the Mbuti. Turnbull was impressed with Mbuti music and spent a month in the field. He was not supported at this time and took a job with filmmakers to help construct the boat used in the film *The African Queen*.

He returned to the UK, communicated with E. E. Evans-Pritchard about his interests in graduate school and decided to return to Oxford because its anthropology programme was not as science-oriented as other UK universities. For his BLitt (Bachelor of Letters, similar to MA in the US) he surveyed the ethnographic literature of the Mbuti and Efe. The review was critical of Father Paul Schebesta's 1920s research with the Efe because Schebesta wanted to test Father Schmidt's (1939) *Kulturkreise* (culture circle) ideas that Pygmies were the most primitive human circle, and he felt Schebesta's fieldwork was superficial because he did not live in Mbuti camps and he did not provide in-depth descriptions or understanding of the Efe. Schebesta said Efe had chiefs, had only instrumental music, and were dominated by villagers. Based upon his limited time in the field, he disagreed with all of these characterizations and returned to the Ituri twice in the 1950s to collect data for his PhD to refute them.

Turnbull was trained and influenced by Rodney Needham, Isaac Schapera, and Evans-Pritchard, classic British social anthropologists. Given this background, Turnbull had to pay attention to social structure, but as reflected in his Indian studies and becoming a Buddhist monk later in his life, he was especially interested in music, religion, and the inner lives of the people. His training in British social anthropology and a personal interest

in religion contributed to his research focus on forager-farmer social relations, rituals that link foragers and farmers, and how Mbuti viewed the forest and their village neighbours. *The forest people* demonstrates his interest in and ability to convey the inner lives of the people and *Wayward servants* (Turnbull 1965) reflects his interests in religion and social structure. He became a naturalized American citizen in the 1960s when he took a position at the American Museum of Natural History (Grinker 2000).

Turnbull died in 1994 and for some reason he did not train a cohort of graduate students to work with forest foragers, but British social anthropologists studying with other well-known African forager scholars continue to make important contributions to Congo Basin forager ethnography. Jerome Lewis, a student of James Woodburn, provided rich ethnographic descriptions of the Mbenzele Aka (Lewis 2002), and Justin Kenrick, a student of Alan Barnard, provided insights into Mbuti relations with farmers, and foragers' views of conservation and other forms of international development (Kinrick 2001). These two anthropologists disagree with Turnbull's symbiotic characterizations of forager-farmer relations and are active in efforts to document how Congo Basin foragers are marginalized and how their lands can be protected (Kinrick and Lewis 2001).

French Traditions

France established colonies in the Congo Basin and it has a long and extensive history of research with forest foragers. Serge Bahuchet is the most prominent contemporary French anthropologist conducting research with forest foragers (three monographs and first author on over 30 journal articles and book chapters on Congo Basin foragers). Bahuchet wanted to be a zoologist. While in high school in the late 1960s he regularly went to the Natural History Museum in Paris and eventually met Raymond Pujol, an agricultural entomologist who was director of ethnozoology. In 1969 he travelled with Pujol and other students to the Central African Republic to collect zoological specimens. Pujol asked him to do ethnozoology of the Pygmies and he went to Kinga, Central African Republic to conduct the study. On his second field trip he met Jacqueline M. C. Thomas, a prominent linguist studying the Aka language; in 1975 she hired him to conduct a short ethnolinguistic study among the Aka. As part of Bahuchet's military service, Thomas was able to recruit Bahuchet for ethnolinguistic studies in the Central African Republic for two years. After two years in the field he attended the first (1978) Conference on Hunting and Gathering Societies (CHAGS) in Paris, France, organized by Maurice Godelier. Bahuchet took seminars on ecology and human sciences from Godelier, a Marxist and materialist anthropologist, and while attending the CHAGS conference was greatly influenced by Richard Lee who was working with the !Kung.

Bahuchet went on to receive his PhD (Docteur d'État) at École des Hautes Études en Sciences Sociales and took a position in the laboratory of Jacqueline M. C. Thomas who continues to work with Bahuchet on a ten-volume Aka Pygmy encyclopaedia. Currently, Bahuchet is Director of Human, Nature and Society studies at the place he started his career, the National Museum of Natural History.

Consequently, Bahuchet is best known for fine-grained ethnography of Aka ethnoecology (Bahuchet 1985) and his historical linguistic studies of the Baka and Aka (Bahuchet 1992a). He also used his ecological and ethnolinguistic perspectives in a variety of other topics: Aka settlement and spatial mobility (Bahuchet 1972; 1992b), ecological constraints on

Aka subsistence (Bahuchet 1985), relations (Bahuchet and Guillemin 1985), Congo Basin forager research on medicinal plants (Motte 1980; 1982; 1993; 1996; 2001), and Joiris's

Japanese Traditions

This overview of the Japanese views because the number of researchers in this region in the last 30 years has increased. The Japanese researchers focused, it is very inductive and is not organized around a central theme.

Mitsuo Ichikawa is the main monograph and first author in Japanese; several more in Japan are avid mountain climbers and have been in the region. After completing college in South-East Asia.

He wanted to make a living and would not have to take a job at Kyoto University and a biologist, to study human evolution in the department of human evolution at Kyoto University and the Itani and Reizo Harako, a suikerbitter in the Ituri forest in the returned to conduct the first study. Tadashi Tanno replaced Harako in the Ituri, and Ichikawa (1992) continued the study.

Ichikawa's training at Kyoto University led to an approach to ecology that emphasizes a more holistic approach. Approaches were emphasized to 'become a researcher akin to a hunter-gatherer, but who would not be a hunter-gatherer' (2004a, 3). Ichikawa was director of Area Studies at Kyoto University, distinct from the one at Tokyo University of Agriculture and Forestry (his love for contemplation (his love for nature rather than theories and methods) in Japanese research as 'fearless' and topics.

Ichikawa is known for his work on the Aka (1978; 1982; 1983; 1987)

social relations, rituals that
 id their village neighbours.
 y the inner lives of the peo-
 n religion and social struc-
 en he took a position at the

a cohort of graduate stu-
 ogists studying with other
 nt contributions to Congo
 dburn, provided rich eth-
 Justin Kenrick, a student
 mers, and foragers' views
 Kinrick 2001). These two
 ations of forager-farmer
 foragers are marginalized

and extensive history of
 it contemporary French
 ographs and first author
 gers). Bahuchet wanted
 rly went to the Natural
 ricultural entomologist
 id other students to the
 d him to do ethnozoool-
 conduct the study. On
 uigist studying the Aka
 idy among the Aka. As
 het for ethnolinguistic
 in the field he attended
 AGS) in Paris, France,
 and human sciences
 ttending the CHAGS
 ith the !Kung.
 les Hautes Études en
 e M. C. Thomas who
 clopaedia. Currently,
 he started his career,

ty of Aka ethnoecol-
 and Aka (Bahuchet
 variety of other top-
 gical constraints on

Aka subsistence (Bahuchet 1978; 1988; Bahuchet et al. 1991) and the history of Aka-farmer relations (Bahuchet and Guillaume 1982). He has mentored and influenced several other Congo Basin forager researchers, including Motte's ethnobotanical research on Aka medicinal plants (Motte 1980; 1982; Motte-Florac et al. 1993), Dounias's research on Baka wild yams (1993; 1996; 2001), and Joiris's (2003) study of forager-farmer relations in Cameroon.

Japanese Traditions

This overview of the Japanese traditions is somewhat longer than British and French overviews because the number of Japanese researchers conducting research with foragers in this region in the last 30 years has been substantially greater than the number of British or French researchers. The Japanese research on Congo Basin foragers is generally ecologically focused, it is very inductive and descriptive, based on observations and some interviews, and is not organized around any one theoretical orientation.

Mitsuo Ichikawa is the most prominent Japanese Congo Basin forager researcher (one monograph and first author on over 25 journal articles and book chapters in English or French; several more in Japanese). In high school and his undergraduate college days he was an avid mountain climber and enjoyed fishing and gathering edible wild plants while hiking. After completing college he travelled to Bhutan, the Hunza Valley and several countries in South-East Asia.

He wanted to make a living where he could continue mountain climbing and travelling, and would not have to take rigorous methods courses. He decided to go into anthropology at Kyoto University and joined a research group directed by Junichiro Itani, a primatologist, to study human-nature relationships in hunter-gatherer groups. Itani, who was in the department of human evolution and helped to establish the Institute of African Studies at Kyoto University and the Japanese Society of Ecological Anthropology, was his mentor. Itani and Reizo Harako, a surgeon and anthropologist, conducted a brief survey of the foragers in the Ituri forest in the Democratic Republic of the Congo (Zaire at the time). Harako returned to conduct the first Japanese study of Mbuti subsistence patterns (Harako 1976). Tadashi Tanno replaced Harako to study subsistence patterns (Tanno 1976) in another part of the Ituri, and Ichikawa (1978) replaced Tanno a few years later.

Ichikawa's training at Kyoto took place in the Faculty of Science and emphasized a broad approach to ecology that adhered to Western theories or methods. Descriptive and inductive approaches were emphasized; 'Let the data speak' was the guiding motto at Kyoto. He hoped to 'become a researcher akin to a small time inventor who would never become part of the mainstream, but who would invent something that nobody had ever thought of' (Ichikawa 2004a, 3). Ichikawa was director of several research programmes at the Center for African Area Studies at Kyoto University and indicated that Kyoto's African studies programme was distinct from the one at Tokyo University because it emphasized fieldwork rather than arm-chair contemplation (his love of outdoors) and 'its own ecologically-oriented methodology' rather than theories and methods from the West (Ichikawa 2005). Ichikawa characterizes Japanese research as 'fearless' because it is not bound by theory and it can easily shift focus and topics.

Ichikawa is known for his rich and detailed descriptions of Mbuti subsistence and settlement (1978; 1982; 1983; 1987), the impact of a cash economy on Mbuti culture (1991), Mbuti

ethno-ornithology (1998), and his Ituri forest ethnobotanical research (Terashima and Ichikawa 2003). By comparison to the French or British and consistent with his training by a primatologist, Ichikawa utilized more observational methods (e.g. participating in net hunts) and quantitative methods (e.g. measuring nets, counting how many game are caught per day). Ichikawa (2004b) considers his 'ecology in a broad sense' as holistic because he is interested in integrating cultural ecology, historical ecology, and political ecology into his research.

Terashima is also a prominent contributor to Congo Basin forager research (first author on over 12 journal articles or book chapters). He conducted extensive field research on Efe forest plant knowledge and social aspects of their economic exchange with neighbouring Lese farmers (Terashima 1986; Terashima et al. 1988). He also investigated why Efe girls sometimes choose to marry Lese farmers (Terashima 1987), and the many interactions between Efe and Lese that revolve around honey (Terashima 1998).

Because of political instability in the Democratic Republic of the Congo in the 1980s, Japanese researchers left the Ituri and initiated projects further to the west with Aka and Baka foragers. Takeuchi (1994; 1995) published ecological studies of hunting activities and dietary avoidance among the Aka of north-eastern Congo. Kitanishi's research among the Aka of the same area examined exchange between the Aka and cultivators (Kitanishi 1994), seasonal changes in subsistence (Kitanishi 1995), and food sharing (Kitanishi 1998). Kitanishi (1996) specifically analysed the acquisition and distribution of meat and honey by Aka males of different ages.

In recent years Japanese research among Baka of northern Congo and south-western Cameroon has increased. Studies have investigated Baka nutrition and dietary intake (Yamauchi et al. 2000), sedentary and migratory hunting camps (Hayashi 2008), conservation and hunting sustainability (Hattori 2005; Yasuoka 2006a), the many uses of Marantaceae plants (Hattori 2006), and the potential of wild yams as staple food resources in African tropical forests (Sato 2001; 2006; Yasuoka 2006b; 2009). Forest peoples preserve and maintain a vast knowledge of tropical species, and the scholars cited here share the priority of documenting this traditional knowledge and its behavioural expressions.

US Traditions

Unlike the other national traditions, two scholars have relatively similar academic productivity on Congo Basin foragers. Robert Bailey and Barry Hewlett have both published one monograph and over 20 journal articles or book chapters as first author. Bailey is better known for his theoretical contributions (e.g. wild yam hypothesis) and Hewlett is better known for his topical contributions (i.e. infant and child development).

Bailey wanted to be a primatologist. After completing an undergraduate degree in history at Harvard College he travelled to Colombia to be a resident biologist and conduct research with squirrel monkeys. In 1976, as he was ready to start his graduate training in biological anthropology at Harvard, Irvén DeVore a primatologist and co-director (with Richard Lee) of the well-known Kalahari project, gave him the opportunity to go to Africa to observe various other primate ecology research sites. He visited several sites, but at the Dja Reserve in Cameroon he hired two Baka men to take him into the forest to observe monkeys. He was impressed with the Baka way of life and decided that studying monkeys to understand

human behaviour was less delightful with Bailey's shi when he was a graduate student work with baboons. Bailey vey of Congo Basin forager the most remote and unacc the early 1980s with his wi focused on men's subsistence Peacock conducted similar Peacock 1985). Bailey's grad ries (e.g. inclusive fitness th from Harvard faculty (e.g. R

In the mid-1990s Bailey a they wanted to make more Emory University and receiv with forest foragers, but con Both hold positions in the Sc

Hewlett's career with Con as illustrious or conventiona Hewlett developed his own his BA he travelled overland on an MA in anthropology groups while later trips were relatively unknown by comp his research that Bahuchet v Aka Hewlett went to Stanfor a well-known geneticist who introduced Hewlett to his cul Hewlett's undergraduate worl programme (a child develop returned to graduate school in the University of California, S. Napoleon Chagnon. Chagnon did not use them in his doctor

More than 15 researchers v DeVore 1989), and as director Auger's (1992) research on M subsistence seasonality. Hewle and include Fouts's work on B conflict (Fouts et al. 2005), M Boyette's research on Aka socia These brief bio-sketches pro tion with Congo Basin forager and social learning, while Baile terns and social relationships, orists influenced both Hewlett

human behaviour was less effective than studying human behaviour directly. DeVore was delighted with Bailey's shift to humans because he wanted to work with forest foragers when he was a graduate student but Sherwood Washburn, his adviser, convinced him to work with baboons. Bailey took courses in biological anthropology and conducted a survey of Congo Basin foragers in 1978 and selected the Efe for study because he felt they were the most remote and unacculturated forest forager ethnic group. He started his research in the early 1980s with his wife and anthropology graduate student, Nadine Peacock. Bailey focused on men's subsistence and time allocation, as well as Efe and Lese growth, while Peacock conducted similar research with Efe women (Bailey 1991; Bailey and Peacock 1988; Peacock 1985). Bailey's graduate training took place at a time when neo-evolutionary theories (e.g. inclusive fitness theory, parental investment theory) were emerging, often coming from Harvard faculty (e.g. Robert Trivers).

In the mid-1990s Bailey and Peacock wanted to move away from basic research because they wanted to make more of a difference to the lives of African peoples, and they went to Emory University and received Masters in Public Health. They no longer conduct research with forest foragers, but conduct applied research in Africa (HIV/AIDS, maternal health). Both hold positions in the School of Public Health at the University of Illinois at Chicago.

Hewlett's career with Congo Basin foragers started before Bailey's (1973), but it was not as illustrious or conventional. As an undergraduate at California State University at Chico, Hewlett developed his own major and called it cultural transmission. After completing his BA he travelled overland to the Congo Basin several times in the early 1970s to work on an MA in anthropology at Chico. The first trip was a survey of Congo Basin forager groups while later trips were with the Aka. Hewlett selected the Aka because they were relatively unknown by comparison to the Ituri groups and he was unaware at the start of his research that Bahuchet was conducting research nearby. After several trips with the Aka Hewlett went to Stanford University in the late 1970s to talk to Luca Cavalli-Sforza, a well-known geneticist who had worked with Aka and other Congo Basin foragers. He introduced Hewlett to his cultural transmission theories, which were of interest because of Hewlett's undergraduate work. After completing the MA Hewlett worked for a Head Start programme (a child development programme for children in poverty) for five years. He returned to graduate school in the early 1980s to work on a PhD in cultural anthropology at the University of California, Santa Barbara, to study Aka father-child relations (1991) under Napoleon Chagnon. Chagnon introduced him to neo-evolutionary theories, but Hewlett did not use them in his doctoral research.

More than 15 researchers were associated with The Harvard Ituri Project (Bailey and DeVore 1989), and as director Bailey trained and influenced several researchers including Auger's (1992) research on Mbuti and Efe food taboos and Jenike's (1985) research on Ituri subsistence seasonality. Hewlett's students have focused on the lives of Congo Basin children and include Fouts's work on Bofi forager weaning (Fouts et al. 2001) and parent-offspring conflict (Fouts et al. 2005), Meehan's work on Aka allomaternal care (Meehan 2005), and Boyette's research on Aka social learning in middle childhood (Boyette 2013).

These brief bio-sketches provide insights into the publications and the US research tradition with Congo Basin foragers. Hewlett is a cultural anthropologist interested in children and social learning, while Bailey is a biological anthropologist interested in subsistence patterns and social relationships, as well as growth and nutrition. Famous evolutionary theorists influenced both Hewlett and Bailey, so the theories and methods that guided their

research were similar. Evolutionary and child development research projects were problem oriented and tested specific hypotheses. Research methods were systematic and quantitative; both Hewlett and Bailey utilized focal follow observations (extended observations of 'focal' individuals; Bailey followed men, Hewlett followed babies), the type of observations Ichikawa felt were inappropriate for humans. But Bailey and Hewlett also had pronounced differences. Hewlett viewed culture, or socially transmitted information, as having its own properties and an important force influencing human behaviour, whereas Bailey felt culture did not have special properties. Hewlett's background and training emphasized the importance of forager cultural models or ideas about research topics (e.g. their criteria of a good father) whereas Bailey's training in primatology and human biology led him to focus on what people did rather than what they said. In contrast to the other traditions, American studies frequently involve narrowly focused research questions and, in many cases, are explicitly guided by evolutionary theories such as behavioural ecology.

Another feature that distinguishes the American research tradition from others is its ongoing ethnoarchaeological research. Ethnoarchaeologists investigate relationships between human behaviour and its material consequences by observing both in the present. For example, Fisher (1993) documented forager-farmer exchange at Efe elephant processing sites in the Ituri Forest and the spatial organization of Efe campsites (Fisher 1987; Fisher and Strickland 1989; 1991). Ethnoarchaeological research of Aka and related Bofi foragers focused on net hunting and women's work effort (Lupo and Schmitt 2002), evolutionary explanations of meat sharing (Lupo and Schmitt 2004), small prey hunting technology and zooarchaeology (Lupo and Schmitt 2005), and taphonomic analyses of small animal bones (Fancher 2009; Landt 2007).

Finally, it is important to note that in trying to characterize particular national traditions, several domains of important research have been omitted. In particular, extensive ethnomusicology of forest foragers has been conducted in France (Arom 1991) and to a lesser extent in the US (Kisliuk 2000).

Comparing Traditions

The research traditions are similar in several respects. The French, Japanese, and US traditions are generally ecological and fall within the sciences rather than the humanities. Bahuchet had a background in zoology, Ichikawa was trained by a primatologist and surgeon in the Faculty of Science, Bailey was trained by a primatologist in biological anthropology, and Hewlett's work was influenced by a geneticist. By comparison, British researchers were trained in social anthropology and utilized humanities and social science approaches in their research.

While the Japanese, French, and US traditions were 'ecological', substantial differences existed in theory and methods. The French and Japanese viewed ecology from a natural history perspective and consequently emphasized detailed descriptions (if not encyclopaedic in the case of the French) of forest forager subsistence and settlement. US researchers viewed ecology from an evolutionary perspective so their research emphasized theory rather than ethnography. Japanese and French researchers shared a strong interest in natural history and ethnography, but their methods and approaches also differed. The French integrated their background in linguistics into natural history while the Japanese used the

three ecological science perspectives. This ecological research tradition revealed details of the relationships that have foreseen.

Pronounced differences in observation and interviews of hunter-gathering behaviour, French ethnology, and Japanese research. American researchers emphasized behavioural ecology.

In summary, American research is atheoretical, and not very American research as superlative with local people. The Japanese research as too close to feel the other three traditions and lack important social and administrative history in the importance of history.

Why Did Scholars

Several researchers were rethought Schebesta's research. Turnbull's descriptions of made a living in the forest, interested in describing the life to cover a topic seldom discussed.

Early Japanese and colonial felt that studies of hunter-gathering to understanding human life. Itani (who trained Ichikawa) Americans and Japanese different. The Japanese reject Western, they did not like American, descriptive, and natural

Several research questions all or most of the four research from diverse theoretical questions that have generated

three ecological science perspectives described above. The three nationalities that comprise this ecological research tradition effectively complement one another, and have collectively revealed details of the relationships between people and the forest that Turnbull could never have foreseen.

Pronounced differences existed in field methods. British researchers used participant observation and interviews and very few or no systematic observations or quantification of behaviour, French ethnolinguists relied upon in-depth interviews with relatively few people, and Japanese researchers mixed observational data with some interview data. American researchers emphasized behavioural observations and varying amounts of interview data.

In summary, Americans tend to view French and Japanese research as too descriptive, atheoretical, and not very systematic/quantitative. The French and British tend to view American research as superficial because they pay little attention to language and interviews with local people. The Japanese tend to view the French research as too encyclopaedic and American research as too narrowly focused and not very creative. British researchers tend to feel the other three traditions are heavily biased towards ecological issues and methods and lack important social and historical contexts. The French have the greatest interest and number of publications on Congo Basin history, perhaps because of their long colonial and administrative history in the region, but Ichikawa says he was influenced by revisionism and the importance of history.

Why Did Scholars Conduct the Studies?

Several researchers were responding to perceived weaknesses in previous research. Turnbull thought Schebesta's research was superficial, and Ichikawa and other Japanese thought Turnbull's descriptions of the Mbuti were romantic and neglected to describe how they made a living in the forest. Other researchers, such as Bahuchet and Hewlett, were interested in describing the life of a relatively unknown hunter-gatherer group or wanted to cover a topic seldom discussed in the literature.

Early Japanese and contemporary American research took place, in part, because both felt that studies of hunter-gatherers, such as the Congo Basin foragers, might provide clues to understanding human nature and human evolution. This is not entirely surprising as Itani (who trained Ichikawa) and DeVore (who trained Bailey) were friends. While the Americans and Japanese shared this objective, field methods and approaches were very different. The Japanese rejected evolutionary theory, in part because it was associated with the West, they did not like American methods such as focal follows, and preferred more inductive, descriptive, and natural history approaches to research.

RESEARCH QUESTIONS

Several research questions have dominated Congo Basin forager research. Researchers from all or most of the four research traditions described above have tried to answer the questions from diverse theoretical and methodological approaches. In this section we examine four questions that have generated the most research.

Subsistence and Settlement

Can forest foragers live in the tropical forest without exchanging carbohydrates with farmers? Bailey et al. (1989, 60) proposed the controversial hypothesis that 'humans have never lived in tropical rainforest independently of domesticated plants and animals.' In light of the ubiquity of forager-farmer exchange observed throughout the region in modern times, it is reasonable to question whether a hunting and gathering subsistence system is possible in this context without access to domesticated foods (Bailey and Headland 1991; Headland and Bailey 1991). Headland (1987) argues that the natural availability of carbohydrate-rich resources, such as wild yams, is a critical limiting factor in rainforest subsistence. As a result, the issue of whether foragers lived independently in the rainforest prior to the arrival of Bantu farmers and their cultivated calories is referred to as the 'wild yam question.' Ethnoecological data centring on the environmental distribution of wild yams have been collected by French and Japanese anthropologists to explore contexts in which contemporary forest foraging is possible, and to extrapolate prehistoric possibilities (Bahuchet et al. 1991; Dounias 2001; Hladik and Dounias 1993; Sato 2001; Yasuoka 2006b; 2009). The most direct challenge to the cultivated calories hypothesis comes from archaeology. As more archaeological evidence is unearthed, it increasingly supports rainforest occupation by hunter-gatherers long before the arrival of farmers (Barham and Mitchell 2008), and possibly beyond 200,000 years ago (Mercader 2002; 2003). Nevertheless, as Bailey et al. (1989) hoped, the wild yam question has proved to be very successful at stimulating ecological and archaeological research in the Congo Basin.

Why do different subsistence technologies exist among Congo Basin foragers? Forest foragers rely on a range of cooperative and individual hunting techniques including nets, spears, bows, traps, and hand capture of small prey. Turnbull (1965) made a distinction between net hunters (Mbuti) and archers (Efe), but Harako was among the first to question *why* these different subsistence technologies coexisted within the Ituri Forest. He related it to language groups, suggesting that hunting nets were introduced by Bantu speakers and only those foragers who associated with Bantu-speaking villagers adopted the use of nets. Since Efe foragers maintained an exchange relationship with Sudanic-speaking Lese farmers, the Efe continued to use the same archery technology employed by the Lese (Harako 1976). This fundamental issue of forest forager diversity would be re-examined from many different perspectives in later years.

It was assumed that bow hunting was less efficient than net hunting, but studies have since demonstrated that the methods are comparable in terms of efficiency (Bailey and Aunger 1989). Numerous other factors have been investigated, although single-variable explanations are probably too simple to account for the observed variation. Many interrelated variables have been shown to influence hunting decisions: seasonal considerations, number of participants, targeted prey, method efficiency, risk sharing, proximity to farming populations, market involvement, and possibly the foraging goals of individual men, women, and children (Hewlett 1996; Lupu and Schmitt 2004).

Forager-Farmer Relations

What is the nature of forager-farmer relationships? How integrated or separate are the two ways of life? Are foragers serfs or slaves of neighbouring farmers? According to Turnbull (1965,

146) 'the relationship between and has been subject to the have received as much scholarly farmers and foragers. Profound relationships and a range of (1996, Takeuchi in press).

In terms of the level of emphasis on the dichotomy, foragers do not know the forest (et al. (2000) also gave the in ent foundational schema (w groups. By contrast, Bailey because Efe men are forest to be in the forest as this is w village to obtain manioc in e made the strongest case for relationship where foragers tionships are so intertwined ers described the multidin relations (Bahuchet 1992a; F

In terms of political-economic relationships range from being inequality and farmer dominated foragers as serfs of Lese farmers village chiefs to summon Efe conducted interviews in the

With the exception of the ethnographically known foragers and none subsist by hunting forager dependence on farmers on his examination of Mbuti gathering life would be posing without their exclusion that Aka in northern Congo forest products. Farmers keep their own, while the Aka exchange carbohydrates. Bailey et al ship benefits foragers. It is the Congo Basin forest villages associated with foraging, development, and his genetic data suggest foraging

Finally, political-economic the Congo Basin today. For services in several Congo Basin other non-government agencies

146) 'the relationship between the two neighbouring peoples, is of the greatest importance and has been subject to the greatest misunderstanding.' Few aspects of forest forager life have received as much scholarly attention as the interdependent relationship between forest farmers and foragers. Profound diversity exists in the nature and intensity of forager-farmer relationships and a range of variables have been identified to explain the diversity (Hewlett 1996, Takeuchi in press).

In terms of the level of interdependence of the two groups, Turnbull (1965) is known for emphasizing the dichotomy between village and forest worlds, giving the impression farmers do not know the forest and foragers are relatively independent from farmers. Hewlett et al. (2000) also gave the impression of different worlds by describing dramatically different foundational schemas (ways of thinking that pervade many domains of life) of the two groups. By contrast, Bailey indicated the forest-village world dichotomy is misleading because Efe men are forest oriented while Efe women are village oriented; Efe men prefer to be in the forest as this is where they hunt and collect, while Efe women prefer to be in the village to obtain manioc in exchange for labour they provide village women. Grinker (1994) made the strongest case for the lack of separate worlds and advocated for a unity view of the relationship where foragers and farmers are considered one ethnic group because their relationships are so intertwined; they live together in houses in the rainforest. Several researchers described the multidimensional (social, ritual, economic) nature of forager-farmer relations (Bahuchet 1992a; Hewlett 1991).

In terms of political-economic power relations, representations of forager-farmer relationships range from being mutually beneficial symbiosis (Turnbull 1965) to pervasive inequality and farmer dominance (Joiris 2003; Rupp 2003). Schebesta (1933) described Efe foragers as serfs of Lese farmers, but Turnbull criticized his work because he relied upon village chiefs to summon Efe from the forest to be interviewed in the village; once Turnbull conducted interviews in the forest he found foragers to be relatively independent of farmers.

With the exception of the Twa in Rwanda and Burundi where a caste system exists, all ethnographically known forest foragers exchange foods with farmers to varying degrees, and none subsist by hunting and gathering alone. It is not clear whether this demonstrates forager dependence on farmers or simply an efficient alternative to full-time foraging. Based on his examination of Mbuti subsistence, Ichikawa (1983) concluded that a hunting and gathering life would be possible in the Ituri Forest from a caloric viewpoint, but very challenging without their exchange relationship with agriculturalists. Takeuchi (1995) found that Aka in northern Congo desired farmer carbohydrates more than farmers desired Aka forest products. Farmers knew the forest well and were able to obtain enough game meat on their own, while the Aka desired and were dependent upon farmers for manioc and other carbohydrates. Bailey et al. (1989), proponents of the wild yam hypothesis, felt the relationship benefits foragers. It is also worth noting that several ethnic groups of farmers live in the Congo Basin forest without relationships with foragers and that not all families in villages associated with foragers have relations with foragers. But little is known about the origin, development, and history of forager-farmer relations. Limited archaeology and recent genetic data suggest foragers lived in forested areas without farmers for a long time.

Finally, political-economic inequality in forager-farmer relations is a crucial issue in the Congo Basin today. Forest foragers are often denied access to health and education services in several Congo Basin countries because they are viewed as 'primitive.' The UN and other non-government agencies are involved with trying to alleviate the marginalization of

African Pygmies. Lewis (2001), Kinrick (2001), Joiris (2003), and Rupp (2003) document the various ways farmers exploit foragers, especially in the context of external extractive activities, such as logging, gold, and diamond industries. Relative interdependence and symbiosis in forager-farmer relations is more likely to occur in rural, low-population density settings with minimal impacts from a cash economy. As market economies (coffee, gold, diamonds, bushmeat trade) expand, farmers are more likely to exploit forest forager labour.

Conservation Issues

How can Congo Basin foragers be integrated into African tropical forest reserves and parks? In the last two decades, scholars from all four national traditions described above have increasingly transcended cataloguing ecological data and directed greater attention to the environmental challenges faced by modern forest foragers (Ichikawa 2006; Noss 2001). Relatedly, international wildlife conservation programmes aim to preserve the biodiversity of Africa's rainforests and support the lifeways of the forest's human inhabitants. Unfortunately, such well-meaning programmes often position forest foragers 'in the crossfire between forest exploitation on the one hand, and attempts to protect the natural environment on the other' (Ichikawa 2004b, 114). In one case study, Hattori (2005) explains several reasons that Baka foragers of Cameroon are indifferent to nature conservation projects. From the Baka point of view, such projects do not adequately consider the realities of foraging life; land-use zoning and hunting regulations are incompatible with their mobility. Further, Baka resist externally imposed environmental education, particularly when farmers play an intermediary role between conservationists and themselves, reinforcing the perception that the Baka are subordinate to neighbouring farmers. In contrast to this top-down approach, there is a growing consensus that conservation management plans are most effective when they actively engage local communities, including hunter-gatherers, as partners in seeking solutions (Bailey et al. 1992; Curran and Tshombe 2001).

Anthropological research can help rainforest populations address ecological challenges in many ways. One is to integrate aspects of conservation into general ethnographic research (e.g. Hattori 2005). Another is to accurately detail the sustainability of different hunting practices in specific contexts (Hart 2000; Noss 2000; Yasuoka 2006a), the impact of commercial bushmeat markets on local prey populations (Wilkie 2001; Wilkie and Carpenter 1999), and the effects of forest product commoditization on forager life (Kitanishi 2006). Ongoing research in these areas will help to reconcile the conservation of forest species with the needs of forest foragers (Ichikawa in press). But documentation of hunting techniques and prey densities alone is not enough. If foragers are to be active participants in conservation efforts and sustainable practices, anthropologists must better understand socio-cultural perceptions of the forest environment and the role that the forest people envision for themselves. Do they share the same environmental values as foreign conservationists? What is the cosmological significance of forest life, and how do foragers interpret international development, conservation, and sustainability? Anthropologists have begun to explore forager perspectives on these contemporary issues. Kinrick (2001; 2002) and Lewis (2001; 2005) have been particularly knowledgeable and vocal advocates for indigenous rights in conjunction with conservation efforts. Continued work along these lines is needed to lend relevant meaning to ecological data.

CRIT

Ecological and I

Since the publication of *est'* of his title has received aspects of their culture on Congo Basin for and evolutionary bias in the German *Kulturkr* ary position as *Naturvo* Basin foragers consistently, and express a strong, has focused on the economic as marriage and the fam

Ecological approaches human-nature relations Basin foragers think and eat each day, how much infants, but we know little to them—the forest, fami

Gender and Natic

Anglo and Japanese male is primarily a consequence to conduct research from late publications. Since th (2005), Courtney Meehar Karen Lupo, have conducted relatively few African ant Loung (1967) was one of est foragers and Godefroy anthropologists' research ment, e.g. establishing pair rather than academic publ

Future Research

Given our knowledge of th and Fancher as an ethn First, qualitative and quant

CRITIQUE AND FUTURE RESEARCH

Ecological and Evolutionary Bias

Since the publication of Turnbull's (1961) influential ethnography, *The forest people*, the 'forest' of his title has received almost as much attention from anthropologists as the 'people' and aspects of their cultures less directly related to environment. In other words, the literature on Congo Basin foragers is dominated by ecologically oriented studies. This ecological and evolutionary bias has a long history in the anthropology of forest foragers as exemplified in the German *Kulturkreise* (culture circles) school where Pygmies had a special evolutionary position as *Naturvolk* (people in close relationships with nature: Schmidt 1939). Congo Basin foragers consistently identify with the rainforest milieu, are fundamentally shaped by it, and express a strong preference for forest life (Hewlett 1996), but research in the region has focused on the economic domains of forest life while neglecting other dimensions, such as marriage and the family, social-emotional relations, and religion.

Ecological approaches have made significant contributions to our understanding of human-nature relations, but few studies exist that provide us with insights into how Congo Basin foragers think and feel about their lives. We know how many calories of meat they eat each day, how much time they spend hunting, and how much time they spend with infants, but we know little about how forest foragers think and feel about what is important to them—the forest, family relationships, religion, etc.

Gender and Nationality Biases

Anglo and Japanese males dominate Congo Basin research described in this chapter. This is primarily a consequence of the time period covered in this review; men were more likely to conduct research from the 1950s through to the 1980s so men had more time to accumulate publications. Since the 1990s, several women, including Hillary Fouts, Bonnie Hewlett (2005), Courtney Meehan, Veronique Joiris, Michelle Kisliuk, Ayako Hirisawa (2005), and Karen Lupo, have conducted long-term research on their own with forest foragers. Also, relatively few African anthropologists have conducted forest forager research. Jean-Félix Loung (1967) was one of the first African anthropologists to conduct research with forest foragers and Godefroy Ngima Mawoung (2006) is the most recent to publish. African anthropologists' research with forest foragers often takes place in the context of development, e.g. establishing parks or building an oil pipeline, so their work shows up in reports rather than academic publications.

Future Research

Given our knowledge of the literature and our particular biases (Hewlett as described above and Fancher as an ethnoarchaeologist), this section identifies areas of future research. First, qualitative and quantitative research is urgently needed on forest forager land tenure

Rupp (2003) document the of external extractive activity-dependence and symbiosis population density settings es (coffee, gold, diamonds, forager labour.

rest reserves and parks? In-tribed above have increased attention to the environment (Noss 2001). Relatedly, the biodiversity of Africa's ants. Unfortunately, such a crossfire between forestal environment on the plains several reasons that projects. From the Baka of foraging life; land-use lity. Further, Baka resist-ers play an intermedi-erception that the Baka own approach, there is ost effective when they artners in seeking solu-

ldress ecological chal-o general ethnographic stainability of different aka 2006a), the impact lkie 2001; Wilkie and n forager life (Kitanishi servation of forest spe-umentation of hunting e active participants in 1st better understand that the forest people ues as foreign conser-ow do foragers inter-Anthropologists have Kinrick (2001; 2002) l advocates for indig-rk along these lines is

and utilization. Forest forager lands are being appropriated and exploited by conservation groups, lumber, gold, and diamond companies, farmers, and others migrating to the forest from urban areas or fleeing areas with warfare. A paucity of data exist on how forest foragers view land use, ownership, and the significance and meanings of their lands. Without this research, others will exploit forest foragers and their lands, and economic, political, and social marginalization will increase dramatically.

Second, several topics are seldom covered in existing studies. Oral histories, demography, and forest forager views on a wide range of issues are poorly represented in the literature. We have a few good studies of the impact of colonization on forest forager groups (Bahuchet and Guillaume 1982; Giles-Vernick 2002; Vansina 1990), but the majority of the research is based on archival work and we know relatively little about the oral histories of forest foragers.

It is surprising that we do not have one good demographic study of forest foragers given that several researchers have conducted ecological studies for several years at the same sites. Several studies identify the number of children and adults in the population, several try to estimate ages, and a few studies include relatively easy-to-collect demographic data, e.g. total fertility rates of post-reproductive women and mortality rates for infants or pre-reproductive adolescents. A complete and systematic demographic study that tries to establish good age estimates does not exist. Systematic hunter-gatherer demography is important in its own right, but it is also important for several evolutionary hypotheses, such as the life history hypothesis to explain forager short stature described above, and it is also important in development circles because demographic data are essential to understanding and responding to health risks in the populations (e.g. mortality data).

Ethnographic research is also needed on how foragers think and feel about a variety of topics, such as sharing, egalitarianism, gender relations, the family, and religion. Existing Japanese and American studies tend to emphasize observational methods and French ethnolinguistic research is descriptive and gives an indirect view of how forest foragers think and feel about the world. We know that forest foragers share extensively and are very egalitarian, but we know little about how they feel and perceive these topics and we know little about how they view such topics as family life, health, and the spiritual world.

Finally, basic ethnographic research is needed on several forest forager ethnic groups. Some anthropologists suggest that hunter-gatherer studies are a thing of the past because hunter-gatherers no longer exist. This is not the case in the Congo Basin. A few studies, but no complete ethnography, exist on some groups (e.g. Bongo, Kola), other groups are known to researchers but do not have any studies (e.g. Bolimba and Mbatia foragers of the Central African Republic), and we are reasonably sure other groups exist, especially in other parts of the Democratic Republic of the Congo, Republic of the Congo, and Angola, but have not been identified or described. Studies have not come out of the Democratic Republic of the Congo and the Ituri since the early 1990s due to political instability, but it now appears possible to conduct research in these areas.

This chapter aims to provide an introduction to Congo Basin forager research traditions and how these traditions influence how hunter-gatherers in this region of the world are represented. French, American, British, and Japanese research traditions were examined and critiqued. Research has emphasized forest forager subsistence patterns and human-nature relations. Considerable research is needed in the region and several research opportunities exist to conduct studies with active hunter-gatherers.

REFERENCES

- Arom, S. 1991. *African pygmies*. Cambridge: Cambridge University Press.
- Aunger, R. V. 1992. The nutritional ecology of hunter-gathering. *Human Ecology* 20, 263-85.
- Bahuchet, S. 1972. Étude écologique et démographique des foragers de la République Centrafricaine. *Journal de l'Association des Africanistes* 42, 509-59.
- Bahuchet, S. 1978. Contraintes démographiques et écologiques des foragers Aka de la Lobaye (Centrafrique). *Journal de l'Association des Africanistes* 48, 257-85.
- Bahuchet, S. 1985. *Les pygmées de la République Centrafricaine*. Paris: Éditions du CNRS.
- Bahuchet, S. 1988. Food supply and hunting strategies in the Ituri Forest (Zaire). In I. de Garine, ed. *Human Ecology* 16, 119-49. Oxford: Oxford University Press.
- Bahuchet, S. 1992a. *Dans la forêt*. Paris: Éditions du CNRS.
- Bahuchet, S. 1992b. Spatial organization of hunter-gatherers in the Ituri Forest. In M. Casimir and A. Rao (eds), *Hunter-gatherers, fishers, pastoralists*. Cambridge: Cambridge University Press.
- Bahuchet, S. and Guillaume, J. 1982. *Foragers of the Congo Basin*. In E. Leacock and J. Vansina (eds), *Human Ecology* 10, 1-11. Cambridge: Cambridge University Press.
- Bahuchet, S., McKee, D., and Head, G. 1991. Agriculture possible for rain forest? *Human Ecology* 19, 1-11.
- Bailey, R. C. 1991. *The behavior of hunter-gatherers*. Arbor: University of Michigan Press.
- Bailey, R. C. and Aunger, R. V. 1991. Hunter-gathering strategies in the Ituri Forest. *Human Ecology* 19, 1-11.
- Bailey, R. C., Bahuchet, S., and Head, G. 1991. *Estimating the concern for forest people*. *Human Ecology* 19, 1-11.
- Bailey, R. C. and DeVore, I. 1991. *Forest, Zaire. American Journal of Anthropology* 84, 1-11.
- Bailey, R. C., Head, G., Jenike, E., and Headland, T. 1991. *Gathering in tropical rainforest*. *Human Ecology* 19, 1-11.
- Bailey, R. C. and Headland, T. 1991. *Human foragers? Human Ecology* 19, 1-11.
- Bailey, R. C. and Peacock, N. 1991. *The Ituri Forest*. In I. de Garine, ed. *Human Ecology* 16, 119-49. Oxford: Oxford University Press.
- Barham, L. S. and Mitchell, P. 2001. *Makers to most recent foragers*. *Human Ecology* 29, 1-11.
- Batini, C., Coia, V., Battaglini, G., Destro-Bisol, G., and Calafell, F. 2001. *logroup: genetic signatures in human evolution* 43, 635-44.

REFERENCES

- Arom, S. 1991. *African polyphony and polyrhythm: musical structure and methodology*. Cambridge: Cambridge University Press.
- Aunger, R. V. 1992. The nutritional consequences of rejecting food in the Ituri Forest of Zaire. *Human Ecology* 20, 263-91.
- Bahuchet, S. 1972. Étude écologique d'un campement de pygmées BaBinga (Region de la Lobaye, République Centrafricaine). *Journal d'Agriculture Tropicale et de Botanique Appliquée* 19, 509-59.
- Bahuchet, S. 1978. Contraintes écologique en forêt tropicale humide: l'exemple des pygmées Aka de la Lobaye (Centrafrique). *Journal d'Agriculture Tropicale et de Botanique Appliquée* 25, 257-85.
- Bahuchet, S. 1985. *Les pygmées Aka et la forêt Centrafricaine*. Paris: SELAF.
- Bahuchet, S. 1988. Food supply uncertainty among the Aka pygmies (Lobaye, Central African Republic). In I. de Garine and G. A. Harrison (eds), *Coping with uncertainty in food supply*, 119-49. Oxford: Oxford University Press.
- Bahuchet, S. 1992a. *Dans la forêt d'Afrique Centrale: les pygmées Aka et Baka*. Paris: SELAF.
- Bahuchet, S. 1992b. Spatial mobility and access to resources among the African pygmies. In M. Casimir and A. Rao (eds), *Mobility and territoriality: social and spatial boundaries among foragers, fishers, pastoralists and peripatetics*, 205-57. New York: Berg.
- Bahuchet, S. and Guillaume, H. 1982. Aka-farmer relations in the northwest Congo Basin. In E. Leacock and R. B. Lee (eds), *Politics and history in band societies*, 189-211. Cambridge: Cambridge University Press.
- Bahuchet, S., McKey, D., and de Garine, I. 1991. Wild yams revisited: is independence from agriculture possible for rainforest hunter-gatherers? *Human Ecology* 19, 213-43.
- Bailey, R. C. 1991. *The behavioral ecology of Efe pygmy men in the Ituri Forest, Zaire*. Ann Arbor: University of Michigan Press.
- Bailey, R. C. and Aunger, R. V. 1989. Net hunters vs. archers: variation in women's subsistence strategies in the Ituri Forest. *Human Ecology* 17, 273-97.
- Bailey, R. C., Bahuchet, S., and Hewlett, B. S. 1992. *Development in the Central African rainforest: concern for forest peoples*. Washington, DC: The World Bank.
- Bailey, R. C. and DeVore, I. 1989. Studies of Efe pygmies and Lese horticulturalists in the Ituri Forest, Zaire. *American Journal of Physical Anthropology* 78, 459-71.
- Bailey, R. C., Head, G., Jenike, M., Owen, B., Rechtman, R., and Zechenter, E. 1989. Hunting and gathering in tropical rainforest: is it possible? *American Anthropologist* 91, 59-82.
- Bailey, R. C. and Headland, T. N. 1991. The tropical rainforest: is it a productive environment for human foragers? *Human Ecology* 19, 261-85.
- Bailey, R. C. and Peacock, N. R. 1988. Efe pygmies of northeast Zaire: subsistence strategies in the Ituri Forest. In I. de Garine and G. A. Harrison (eds), *Coping with uncertainty in food supply*, 88-117. Oxford: Oxford University Press.
- Barham, L. S. and Mitchell, P. 2008. *The first Africans: African archaeology from the earliest tool-makers to most recent foragers*. Cambridge: Cambridge University Press.
- Batini, C., Coia, V., Battaglia, C., Rocha, J., Pilkington, M. M., Spedini, G., Comas, D., Destro-Bisol, G., and Calafell, F. 2007. Phylogeography of the human mitochondrial L1c haplogroup: genetic signatures of the prehistory of central Africa. *Molecular Phylogenetics and Evolution* 43, 635-44.

- Becker, N. S. A., Verdu, P., Hewlett, B., and Pavard, S. 2010. Can life history trade-offs explain the evolution of short stature in human pygmies? A response to Migliano and colleagues. *Human Biology* 82, 17–27.
- Boyette, A. H. 2013. Social learning during middle childhood among Aka foragers and Ngandu farmers of the Central African Republic. PhD thesis, Washington State University.
- Cavalli-Sforza, L. L. 1986. *African pygmies*. New York: Academic Press.
- Curran, B. K. and Tshombe R. K. 2001. Integrating local communities into the management of protected areas: lessons from the DR Congo and Cameroon. In W. Weber, L. J. T. White, A. Vedder, and L. Naughton-Treves (eds), *African rainforest ecology and conservation: an interdisciplinary perspective*, 513–34. New Haven: Yale University Press.
- Diamond, J. 1991. Why are pygmies small? *Nature* 354, 111–12.
- Dounias, E. 1993. Perception and use of wild yams by the Baka hunter-gatherers in south Cameroon. In C. M. Hladik, A. Hladik, O. F. Linares, H. Pagezy, A. Semple, and M. Hadley (eds), *Tropical forests, people and food: biocultural interactions and applications to development*, 621–32. Paris: UNESCO.
- Dounias, E. 1996. Sauvage ou cultivé? La paraculture des ignames sauvages par les pygmées Baka du Cameroun. In C. M. Hladik, A. Hladik, H. Pagezy, O. F. Linares, G. J. A. Koppert, and A. Froment (eds), *L'alimentation en forêt tropicale: interactions bioculturelles et perspectives de développement*, 939–60. Paris: UNESCO.
- Dounias, E. 2001. The management of wild yam tubers by the Baka pygmies in southern Cameroon. *African Study Monographs*, Supplement 26, 135–56.
- Fancher, J. M. 2009. An ethnoarchaeological analysis of small prey bones produced by forest foragers of the Central African Republic. PhD thesis, Washington State University.
- Fisher, J. W. 1987. Shadows in the forest: ethnoarchaeology among the Efe pygmies. PhD thesis, University of California, Berkeley.
- Fisher, J. W. 1993. Foragers and farmers: material expressions of interaction at elephant processing sites in the Ituri Forest, Zaire. In J. Hudson (ed.), *From bones to behavior: ethnoarchaeological and experimental contributions to the interpretation of faunal remains*, 247–62. Carbondale: Southern Illinois University at Carbondale Center for Archaeological Investigations Occasional Paper 21.
- Fisher, J. W. and Strickland, H. C. 1989. Ethnoarchaeology among Efe pygmies, Zaire: spatial organization of campsites. *American Journal of Physical Anthropology* 78, 473–84.
- Fisher, J. W. and Strickland, H. C. 1991. Dwellings and fireplaces: keys to Efe pygmy campsite structure. In C. S. Gamble and W. A. Boismier (eds), *Ethnoarchaeological approaches to mobile campsites: hunter-gatherer and pastoralist case studies*, 215–36. Ann Arbor: International Monographs in Prehistory Ethnoarchaeological Series 1.
- Fouts, H. N., Hewlett, B. S., and Lamb, M. E. 2001. Weaning and the nature of early childhood interactions among Bofi foragers in central Africa. *Human Nature* 12, 27–46.
- Fouts, H. N., Hewlett, B. S., and Lamb, M. E. 2005. Parent-offspring weaning conflicts among the Bofi farmers and foragers of central Africa. *Current Anthropology* 46, 29–50.
- 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*, 101–31. Paris: Creaphis.
- Giles-Vernick, T. 2002. *Cutting the vines of the past: environmental histories of the central African rainforest*. Charlottesville: University Press of Virginia.
- Grinker, R. R. 1994. *Houses in the rainforest: ethnicity and inequality among farmers and foragers in central Africa*. Berkeley: University of California Press.
- Grinker, R. R. 2000. *In the arms of Africa: the life of Colin M. Turnbull*. New York: St. Martin's Press.
- Harako, R. 1976. The Mbuti as hunter-gatherers. (I). *Kyoto University African Studies Review* 1, 1–10.
- Hart, J. A. 2000. Impact and change in the Congo-Zaire: a comparative study. J. G. Robinson and E. L. Bertalanffy (eds), *The Congo-Zaire basin: a comparative study*. New York: Columbia University Press.
- Hattori, S. 2005. Nature conservation in the Congo basin. *African Study Monographs*, Supplement 26, 135–56.
- Hattori, S. 2006. Utilization of natural resources in the Congo basin. *African Study Monographs*, Supplement 26, 135–56.
- Hayashi, K. 2008. Hunting activities of the Baka hunter-gatherers in eastern Cameroon. *African Study Monographs*, Supplement 26, 135–56.
- Headland, T. N. 1987. The wild in a tropical rainforest ecosystem. *African Study Monographs*, Supplement 26, 135–56.
- Headland, T. N. and R. C. Bailon. 1987. The wild in a tropical rainforest ecosystem. *African Study Monographs*, Supplement 26, 135–56.
- Hewlett, B. L. 2005. Vulnerability of Ngandu adolescents of the Baka hunter-gatherer childhood. *African Study Monographs*, Supplement 26, 135–56.
- Hewlett, B. S. 1991. *Intimate relations: a study of the Baka hunter-gatherers of the Congo*. Ann Arbor: University of Michigan Press.
- Hewlett, B. S. 1996. *Cultural change among twentieth century hunter-gatherers*. University Press.
- Hewlett, B. S. (ed) in press. *Congo Basin Pygmies*. New Brunswick: Transaction Publishers.
- Hewlett, B. S., Lamb M. E., Iles, trust, and sharing among the Baka hunter-gatherers. In C. Hladik (ed.), *Tropical forests, people and food: biocultural interactions and applications to development*, 163–76. Paris: UNESCO.
- Ichikawa, M. 1978. The residence patterns of the Baka hunter-gatherers. *African Study Monographs*, Supplement 26, 135–56.
- Ichikawa, M. 1982. *The hunter-gatherers of the Congo basin*. Tokyo: University of Tokyo Press.
- Ichikawa, M. 1983. An examination of the Baka hunter-gatherers of the Congo basin. *African Study Monographs*, Supplement 26, 135–56.
- Ichikawa, M. 1987. Food and nutrition among the Baka hunter-gatherers. *African Study Monographs*, Supplement 26, 135–56.
- Ichikawa, M. 1991. The impact of modernization on the Baka hunter-gatherers. *Ethnological Studies* 30, 1–10.
- Ichikawa, M. 1998. The Baka hunter-gatherers of the Congo basin. *African Study Monographs*, Supplement 26, 135–56.
- Ichikawa, M. 2004a. Benevolent hunter-gatherers? *Before Farming* 1, 1–10.
- Ichikawa, M. 2004b. The comparative observation of the Baka hunter-gatherers in his-

- Harako, R. 1976. The Mbuti as hunters: a study of ecological anthropology of the Mbuti pygmies (1). *Kyoto University African Studies* 10, 37-99.
- Hart, J. A. 2000. Impact and sustainability of indigenous hunting in the Ituri Forest, Congo-Zaire: a comparison of the unhunted and hunted duiker populations. In J. G. Robinson and E. L. Bennett (eds), *Hunting for sustainability in tropical forests*, 106-53. New York: Columbia University Press.
- Hattori, S. 2005. Nature conservation and hunter-gatherers' life in Cameroonian rainforest. *African Study Monographs*, Supplement 29, 41-51.
- Hattori, S. 2006. Utilization of Marantaceae plants by Baka hunter-gatherers in southeastern Cameroon. *African Study Monographs*, Supplement 33, 29-48.
- Hayashi, K. 2008. Hunting activities in forest camps among the Baka hunter-gatherers of southeastern Cameroon. *African Study Monographs* 29, 73-92.
- Headland, T. N. 1987. The wild yam question: how well could independent hunter-gatherers live in a tropical rainforest ecosystem? *Human Ecology* 15, 463-91.
- Headland, T. N. and R. C. Bailey. 1991. Introduction: have hunter-gatherers ever lived in tropical rainforest independently of agriculture? *Human Ecology* 19, 115-22.
- Hewlett, B. L. 2005. Vulnerable lives: the experience of death and loss among the Aka and Ngandu adolescents of the Central African Republic. In B. Hewlett and M. Lamb (eds), *Hunter-gatherer childhoods*, 322-42. New Brunswick: Aldine/Transaction.
- Hewlett, B. S. 1991. *Intimate fathers: the nature and context of Aka pygmy paternal infant care*. Ann Arbor: University of Michigan Press.
- Hewlett, B. S. 1996. Cultural diversity among African pygmies. In S. Kent (ed.), *Cultural diversity among twentieth century foragers: an African perspective*, 215-44. Cambridge: Cambridge University Press.
- Hewlett, B. S. (ed) in press. *Congo basin hunter-gatherers: culture, history and biology of African Pygmies*. New Brunswick: Transaction.
- Hewlett, B. S., Lamb M. E., Leyendecker, B., and Schölmerich, A. 2000. Internal working models, trust, and sharing among foragers. *Current Anthropology* 41, 287-97.
- Hladik, A. and Dounias, E. 1993. Wild yams of the African forest as potential food resources. In C. Hladik (ed.), *Tropical forests, people, and food: biocultural interactions and applications to development*, 163-76. Paris: UNESCO.
- Ichikawa, M. 1978. The residential groups of the Mbuti pygmies. *Senri Ethnological Studies* 1, 131-88.
- Ichikawa, M. 1982. *The hunters of the forest: the Mbuti pygmies*. Kyoto: Jinbun-Shoin.
- Ichikawa, M. 1983. An examination of the hunting-dependent life of the Mbuti pygmies, eastern Zaire. *African Study Monographs* 4, 55-76.
- Ichikawa, M. 1987. Food restrictions of the Mbuti pygmies, eastern Zaire. *African Study Monographs*, Supplement 6, 97-121.
- Ichikawa, M. 1991. The impact of commoditisation on the Mbuti of eastern Zaire. In N. Peterson and T. Matsuyama (eds), *Cash, commoditisation and changing foragers*, 135-62. Senri Ethnological Studies 30. Osaka: National Museum of Ethnology.
- Ichikawa, M. 1998. The birds as indicators of the invisible world: ethno-ornithology of the Mbuti hunter-gatherers. *African Study Monographs*, Supplement 25, 105-21.
- Ichikawa, M. 2004a. Benefit of foresight: from evolutionary interest to global environmental problems. *Before Farming* 4, Article 7.
- Ichikawa, M. 2004b. The Japanese tradition of central African hunter-gatherer studies: with comparative observation on the French and American traditions. In A. Barnard (ed.), *Hunter-gatherers in history, archaeology and anthropology*, 103-14. Oxford: Berg.

- Ichikawa, M. 2005. The history and current situation of anthropological studies on Africa in Japan. *The African Anthropologist* (Journal of the Pan African Anthropological Association) 12, 158–71.
- Ichikawa, M. 2006. Problems in the conservation of rainforests in Cameroon. *African Study Monographs*, Supplement 33, 3–20.
- Ichikawa, M. in press. Forest conservation and indigenous peoples in the Congo Basin: new trends toward reconciliation between global issues and local interest. In B. Hewlett (ed), *Congo basin hunter-gatherers: culture, history and biology of African Pygmies*. New Brunswick: Transaction.
- Jenike, M. R. 1985. Seasonal changes in Efe foraging behavior examined from the perspective of the diet breadth model. BA thesis, Harvard-Radcliffe College.
- Joiris, D. 2003. The framework of central African hunter-gatherers and neighbouring societies. *African Study Monographs*, Supplement 28, 57–79.
- Kinrick, J. 2001. Present predicaments of hunter gatherers and former hunter gatherers of the central African rainforests. In A. Barnard and J. Kinrick (eds), *Africa's indigenous people: 'first peoples' or 'marginalised minorities'?*, 39–60. Edinburgh: Centre of African Studies.
- Kinrick, J. 2002. Anthropology and anthropocentrism: images of hunter-gatherers, westerners and the environment. In H. Stewart, A. Barnard, and K. Omura (eds), *Self and other-images of hunter-gatherers*, 191–213. Osaka: National Museum of Ethnology.
- Kinrick, J. and Lewis, J. 2001. Discrimination against the forest people ('pygmies') of central Africa. In S. Chama and M. Jensen (eds), *Racism against indigenous people*, 312–25. Copenhagen: IWGIA.
- Kisliuk, M. 2000. *Seize the dance: BaAka musical life and the ethnography of performance*. Oxford: Oxford University Press.
- Kitanishi, K. 1994. The exchange of forest products (Irvingia nuts) between the Aka hunter-gatherers and the cultivators in northeastern Congo. *Tropics* 4, 79–92.
- Kitanishi, K. 1995. Seasonal changes in the subsistence activities and food intake of the Aka hunter-gatherers in northeastern Congo. *African Study Monographs* 16, 73–118.
- Kitanishi, K. 1996. Variability in the subsistence activities and distribution of food among different aged males of the Aka hunter-gatherers in northeastern Congo. *African Study Monographs* 17, 35–57.
- Kitanishi, K. 1998. Food sharing among the Aka hunter-gatherers in northeastern Congo. *African Study Monographs*, Supplement 25, 3–32.
- Kitanishi, K. 2006. The impact of cash and commoditization on the Baka hunter-gatherer society in southeastern Cameroon. *African Study Monographs*, Supplement 33, 121–42.
- Landt, M. J. 2007. Tooth marks and human consumption: mastication research among foragers of the Central African Republic. *Journal of Archaeological Science* 34, 1629–40.
- Lewis, J. 2001. Forest people or village people. Whose voice will be heard? In A. Barnard and J. Kinrick (eds), *Africa's indigenous peoples: 'first peoples' or 'marginalized minorities'?*, 61–78. Edinburgh: Centre of African Studies.
- Lewis, J. 2002. Forest hunter-gatherers and their world: a study of the Mbendjele Yaka pygmies of Congo-Brazzaville and their secular and religious activities and representations. PhD thesis, University of London.
- Lewis, J. 2005. Whose forest is it anyway? Mbendjele Yaka pygmies, the Ndoki Forest, and the wider world. In W. Tadesse and T. Widlock (eds), *Property and equality: encapsulation, commercialisation, discrimination*, 56–78. Oxford: Berghahn.
- Loung, J.-F. 1967. Le nom authentique du group pygmée de la région cotière Camerounaise. *Revue de Géographie du Cameroun* 7, 81–94.
- Lupo, K. D. and Schmitt, D. 2005. The effect of men's and women's work effort: the Congo Basin. *Journal of Human Evolution* 48, 1–10.
- Lupo, K. D. and Schmitt, D. 2006. The show-off hypothesis among hunter-gatherers and its implications for the evolution of human sociality. *Investigations Southern African Archaeology* 1, 1–10.
- Lupo, K. D. and Schmitt, D. 2007. The measures of taxonomic diversity in African forest foragers. *Journal of Human Evolution* 52, 1–10.
- Meehan, C. 2005. The effect of caregiving among the Aka. *Journal of Human Evolution* 48, 1–10.
- Mercader, J. 2002. Forest people and the evolution of human sociality. *Evolutionary Anthropology* 11, 1–10.
- Mercader, J. 2003. Introduction. *Under the canopy: the evolution of human sociality*. University Press.
- Migliano, A. B., Vinicius, L., and H. 2006. The evolution of human pygmies. *Proceedings of the National Academy of Sciences* 103, 1–10.
- Motte, E. 1980. A propos des pygmies du Congo. *Journal d'Agriculture Tropicale* 26, 1–10.
- Motte, E. 1982. *Les plantes chères aux pygmies: contribution à une étude ethnobotanique des pygmies-cultivateurs du Congo*. Motte-Florac, E., Bahuchet, S., and the Aka pygmies of the Congo. Pagezy, A. Semple, and M. 2006. *Pygmies and applications to the study of human evolution*. Ngima Mawoung, G. 2006. The Bakola of the coastal region of the Congo. *Tropics* 16, 33, 49–69.
- Noss, A. J. 2000. Cable snarling and the evolution of human sociality. L. Bennett (eds), *Hunting and the evolution of human sociality*. University Press.
- Noss, A. J. 2001. Conservation of the Central African Republic. In W. Tadesse and T. Widlock (eds), *African rainforest ecology and conservation*. Haven: Yale University Press.
- Patin, E., Laval, G., Barre, K. K., Kidd, J. R., Van de Heyer, E., and Quintana-Murci, L. 2006. The evolution of human sociality and pygmy hunter-gatherers. *Proceedings of the National Academy of Sciences* 103, 1–10.
- Peacock, N. R. 1985. Time and the evolution of human sociality. east Zaire. PhD thesis, H. Quintana-Murci, L., Quac Mouguiama-Daouda, P., Veen, L., Hombert, J.-M.

- Lupo, K. D. and Schmitt, D. N. 2002. Upper Paleolithic net-hunting, small prey exploitation, and women's work effort: a view from the ethnographic and ethnoarchaeological record of the Congo Basin. *Journal of Archaeological Method and Theory* 9, 147-79.
- Lupo, K. D. and Schmitt, D. N. 2004. Meat sharing and the archaeological record: a test of the show-off hypothesis among central African Bofi foragers. In G. M. Crothers (ed.), *Hunters and gatherers in theory and archaeology*, 241-60. Carbondale: Center for Archaeological Investigations Southern Illinois University Carbondale Occasional Paper No. 31.
- Lupo, K. D. and Schmitt, D. N. 2005. Small prey hunting technology and zooarchaeological measures of taxonomic diversity and abundance: ethnoarchaeological evidence from central African forest foragers. *Journal of Anthropological Archaeology* 24, 335-53.
- Meehan, C. 2005. The effects of maternal locality on alloparental behavior and frequency of caregiving among the Aka foragers of the Central African Republic. *Human Nature* 16, 58-80.
- Mercader, J. 2002. Forest people: the role of African rainforests in human evolution and dispersal. *Evolutionary Anthropology* 11, 117-24.
- Mercader, J. 2003. Introduction: the Paleolithic settlement of rainforests. In J. Mercader (ed.), *Under the canopy: the archaeology of tropical rainforests*, 1-31. New Brunswick: Rutgers University Press.
- Migliano, A. B., Vinicius, L., and Lahr, M. M. 2007. Life history trade-offs explain the evolution of human pygmies. *Proceedings of the National Academy of Sciences USA* 104, 20216-19.
- Motte, E. 1980. A propos des thérapeutes pygmées Aka de la région de la Lobaye (Centrafrique). *Journal d'Agriculture Tropicale et de Botanique Appliquée* 27, 113-32.
- Motte, E. 1982. *Les plantes chez les pygmées Aka et les Monzombo de la Lobaye (Centrafrique): contribution à une étude ethnobotanique comparative chez des chasseurs-cueilleurs et des pêcheurs-cultivateurs dans un même milieu végétal*. Paris: SELAF.
- Motte-Florac, E., Bahuchet, S., and Thomas, J. M. C. 1993. The role of food in the therapeutics of the Aka pygmies of the Central African Republic. In C. M. Hladik, A. Hladik, O. F. Linares, H. Pagezy, A. Semple, and M. Hadley (eds), *Tropical forests, people and food: biocultural interactions and applications to development*, 549-60. Paris: UNESCO.
- Ngima Mawoung, G. 2006. Perception of hunting, gathering and fishing techniques of the Bakola of the coastal region, southern Cameroon. *African Study Monographs*, Supplement 33, 49-69.
- Noss, A. J. 2000. Cable snares and nets in the Central African Republic. In J. G. Robinson and E. L. Bennett (eds), *Hunting for sustainability in tropical forests*, 282-304. New York: Columbia University Press.
- Noss, A. J. 2001. Conservation, development, and 'the forest people': the Aka of the Central African Republic. In W. Weber, L. J. T. White, A. Vedder, and L. Naughton-Treves (eds), *African rainforest ecology and conservation: an interdisciplinary perspective*, 313-33. New Haven: Yale University Press.
- Patin, E., Laval, G., Barreiro, L. B., Salas, A., Semino, O., Santachiara-Benerecetti, S., Kidd, K. K., Kidd, J. R., Van der Veen, L., Hombert, J.-M., Gessain, A., Froment, A., Bahuchet, S., Heyer, E., and Quintana-Murci, L. 2009. Inferring the demographic history of African farmers and pygmy hunter-gatherers using a multilocus resequencing data set. *PLoS Genetics* 5, e1000448.
- Peacock, N. R. 1985. Time allocation, work and fertility among the Efe pygmy women of north-east Zaire. PhD thesis, Harvard University.
- Quintana-Murci, L., Quach, H., Harmant, C., Luca, F., Massonnet, B., Patin, E., Sica, L., Mouguiama-Daouda, P., Comas, D., Tzur, S., Balanovsky, O., Kidd, K. K., Kidd, J. R., Van der Veen, L., Hombert, J.-M., Gessain, A., Verdu, P., Froment, A., Bahuchet, S., Heyer, E., Dausset,

- J., Salas, A., and Behar, D. M. 2008. Maternal traces of deep common ancestry and asymmetric gene flow between pygmy hunter-gatherers and Bantu-speaking farmers. *Proceedings of the National Academy of Sciences USA* 105, 1596–1601.
- Rupp, S. 2003. Interethnic relations in southeastern Cameroon: challenging the 'hunter-gatherer'–'farmer' dichotomy. *African Study Monographs*, Supplement 28, 37–56.
- Sato, H. 2001. The potential of edible wild yams and yam-like plants as a staple food resource in the African tropical rainforest. *African Study Monographs*, Supplement 26, 123–34.
- Sato, H. 2006. A brief report on a large mountain-top community of *Dioscorea praehensilis* in the tropical rainforest of southeastern Cameroon. *African Study Monographs*, Supplement 33, 21–8.
- Schebesta, P. 1933. *Among Congo pygmies*. London: Hutchinson.
- Schmidt, W. 1939. *The culture historical method of ethnology*, trans. S. A. Sieber. New York: Fortuny's.
- Takeuchi, K. 1994. Dietary avoidance among the Aka hunter-gatherers, northeastern Congo. *Journal of African Studies* 44, 1–28.
- Takeuchi, K. 1995. Subsistence hunting in African tropical forest: hunting techniques and activities among the Aka hunter-gatherers, northeastern Congo. *Zooarchaeology* 4, 27–52.
- Takeuchi, K. in press. Interethnic relations between forest foragers and farmers: dialectic symbiosis and diversity. In B. Hewlett (ed.), *Congo basin hunter-gatherers: culture, history and biology of African Pygmies*. New Brunswick: Transaction.
- Tanno, T. 1976. The Mbuti net-hunters in the Ituri Forest, eastern Zaire: their hunting activities and band composition. *Kyoto University African Studies* 10, 101–35.
- Terashima, H. 1986. Economic exchange and the symbiotic relationship between the Mbuti (Efe) pygmies and the neighboring farmers. *Sprache und Geschichte in Afrika* 7, 391–405.
- Terashima, H. 1987. Why Efe girls marry farmers: socio-ecological backgrounds of inter-ethnic marriage in the Ituri Forest. *African Study Monographs* 6, 65–84.
- Terashima, H. 1998. Honey and holidays: the interactions mediated by honey between Efe hunter-gatherers and Lese farmers in the Ituri Forest. *African Study Monographs*, Supplement 25, 123–34.
- Terashima, H. and Ichikawa, M. 2003. A comparative ethnobotany of the Mbuti and Efe hunter-gatherers in the Ituri Forest, Democratic Republic of Congo. *African Study Monographs* 24, 1–168.
- Terashima, H., Ichikawa, M., and Sawada, M. 1988. Wild plant utilization of the Balese and the Efe of the Ituri Forest, the Republic of Zaire. *African Study Monographs*, Supplement 8, 1–78.
- Turnbull, C. M. 1961. *The forest people*. New York: Simon & Schuster.
- Turnbull, C. M. 1965. *Wayward servants: the two worlds of the African pygmies*. New York: Natural History Press.
- Vansina, J. 1990. *Paths in the rainforests: toward a history of political tradition in equatorial Africa*. Madison: University of Wisconsin Press.
- Verdu, P., Austerlitz, A. E., Vitalis, R., Georges, M., Théry, S., Froment, A., Le Bomin, S., Gessain, A., Hombert, J.-M., Van der Veen, L., Quintana-Murci, L., Bahuchet, S., and Heyer, E. 2009. Origins and genetic diversity of pygmy hunter-gatherers from western central Africa. *Current Biology* 19, 1–7.
- Walker, R., Gurven, M., and Hill, K. 2006. Growth rates and life histories in twenty-two small scale societies. *American Journal of Human Biology* 18, 295–311.
- Wilkie, D. S. 2001. Bushmeat hunting in the Congo Basin: a brief overview. In M. I. Bakkar, G. A. B. d. Fonseca, R. A. Mittermeier, A. B. Rylands, and K. W. Painemilla (eds), *Hunting and*

bushmeat utilization in the A
17–20. Washington: Conser
Wilkie, D. S. and Carpenter, J.
impacts and options for mit
Yamauchi, T., Sato, H., and Ka
intake among the Baka hu
Monographs 21, 67–82.
Yasuoka, H. 2006a. The sus
hunter-gatherers in southe
95–110.
Yasuoka, H. 2006b. Long
hunter-gatherers in the no
question? *Human Ecology*:
Yasuoka, H. 2009. The vari
cial reference to the availa
Monographs 30, 89–119.

- bushmeat utilization in the African rainforest. Perspectives toward a blueprint for conservation*, 17–20. Washington: Conservation International.
- Wilkie, D. S. and Carpenter, J. F. 1999. Bushmeat hunting in the Congo Basin: an assessment of impacts and options for mitigation. *Biodiversity and Conservation* 8, 927–55.
- Yamauchi, T., Sato, H., and Kawamura, K. 2000. Nutritional status, activity pattern, and dietary intake among the Baka hunter-gatherers in the village camps in Cameroon. *African Study Monographs* 21, 67–82.
- Yasuoka, H. 2006a. The sustainability of duiker (*Cephalophus* sp.) hunting for the Baka hunter-gatherers in southeastern Cameroon. *African Study Monographs*, Supplement 33, 95–110.
- Yasuoka, H. 2006b. Long-term foraging expeditions (molongo) among the Baka hunter-gatherers in the northwestern Congo Basin, with special reference to the 'wild yam question'. *Human Ecology* 34, 275–96.
- Yasuoka, H. 2009. The variety of forest vegetations in south-eastern Cameroon, with special reference to the availability of wild yams for the forest hunter-gatherers. *African Study Monographs* 30, 89–119.