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 and Table 44.1 gives the larger or better-documented areas. Foragers and Bolimba foragers are not included. Research on Congo Basin foragers is worth noting that some
Ethnic groups and their respective languages are divided into linguistic families. The majority of the groups listed in Table 44.1 belong to the Bantu family. The use of the term "Pygmy" is avoided in this chapter, as it is considered disrespectful and insensitive. Researchers have noted differences in the use of the term by non-specialists and specialists. The term "Pygmy" is not used in this chapter.

Table 44.1 Major ethnolinguistic groups of Congo Basin hunter-gatherers

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Approximate population</th>
<th>Linguistic family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aka (Mbende dialectal sub-group)</td>
<td>35,000</td>
<td>Bantu</td>
</tr>
<tr>
<td>Asua</td>
<td>3,000</td>
<td>Sudanic</td>
</tr>
<tr>
<td>Efe</td>
<td>10,000</td>
<td>Sudanic</td>
</tr>
<tr>
<td>Baka (known as Bangombe in some areas)</td>
<td>40,000</td>
<td>Oubanguian</td>
</tr>
<tr>
<td>Bofi</td>
<td>3,000</td>
<td>Oubanguian</td>
</tr>
<tr>
<td>Bongo (also known as Aka)</td>
<td>2,000</td>
<td>Bantu</td>
</tr>
<tr>
<td>Koia (also known as Gyei)</td>
<td>3,500</td>
<td>Bantu</td>
</tr>
<tr>
<td>Mbuti-Sua</td>
<td>7,500</td>
<td>Bantu</td>
</tr>
<tr>
<td>Medzan (also known as Tikar)</td>
<td>250</td>
<td>Bantu</td>
</tr>
<tr>
<td>Nsua</td>
<td>1,000</td>
<td>Bantu</td>
</tr>
<tr>
<td>Twa (Ntiomba region)</td>
<td>14,000</td>
<td>Bantu</td>
</tr>
<tr>
<td>Twa (Kasa region)</td>
<td>Unknown</td>
<td>Bantu</td>
</tr>
<tr>
<td>Twa (Rwandan and Burundi region)</td>
<td>10,000</td>
<td>Bantu</td>
</tr>
</tbody>
</table>

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 Mbati 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,
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 Medzans), 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 origins are 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).
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. B. 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 Mbutele 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 encyclopedia. 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 ethnology (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 1983; 1986; 1993; 1996; 2001), and Joiris's

**Japanese Traditions**

This overview of the Japanese views because the number of this region in the last 30 years of French researchers. The Japan focused, it is very inductive and is not organized around the

Mitsuo Ichikawa is the m monograph and first author French; several more in Japan an avid mountain climber at ing. After completing college in South-East Asia.

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Ichikawa's training at Ky o approach to ecology that adt approaches were emphasize to 'become a researcher a mainstream, but who woulec 2004a, 3). Ichikawa was in Area Studies at Kyoto Unive distinct from the one at Tok chair contemplation (his lov rather than theories and m

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and extensive history of the contemporary French ethnography and first author Bahuchet wanted to go to the Natural ricultural entomologist id other students to the work them to do ethnography and conduct the study. On August studying the Aka for the ethnolinguistic in the field he attended AGS in Paris, France, and human sciences attending the CHAGS ith the !Kung, les Hautes Etudes en M. C. Thomas who clopaedia. Currently, he started his career.

Aka ethnoecological and Aka (Bahuchet variety of other topical 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), Doumas's research on Baka wild yarns (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 armchair 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 neighboring 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; 1999) published ecological studies of hunting activities and dietary avoidance among the Aka of north-eastern Congo. Kitaniishi's research among the Aka of the same area examined exchange between the Aka and cultivators (Kitaniishi 1994), seasonal changes in subsistence (Kitaniishi 1995), and food sharing (Kitaniishi 1998). Kitaniishi (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 2006), 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, Irven 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 with baboons. Bailey was very of Congo Basin forager research, and he focused on men's subsister Peacock conducted similar research (Peacock 1985). Bailey's grad ees (e.g. inclusive fitness theory) came from Harvard faculty (e.g. R)

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

Hewlett's career with Cono 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 & Aka Hewlett went to Stanford a well-known geneticist who introduced Hewlett to his cul Hewlett's undergraduate wor programme (a child development) returned to graduate school in the University of California, S. Napoleon Chagnon. Chagnon did not use them in his doctor More than 15 researchers \ DeVore 1989), and as director Aunger's (1992) research on M subsistence seasonality. Hewlett and include Fouts's work on B conflict (Fouts et al. 2005), M. Boyette's research on Aka socia These brief bio-sketches pro

with Congo Basin forager an social learning, while Baile terms and social relationships, orists influenced both Hewlett
Research (Terashima and Daisen 1986) is consistent with his training (e.g. participating in many game are caught as holistic because he is political ecology into his research). First author field research on Efe, in association with neighboring sites, why Efe girls and the many interactions between the Congo in the 1980s, the west with Aka and hunting activities and nishi’s research among Kikangese cultivators (Kitinashi and Kitini 1998) on meat and honey by yango and south-western chimpanzee diets (Hayashi 2008), contain, the many uses of staple food resources forest peoples preserve even here are shared the pre-occupations.

Similar academic pursuits have both published author Bailey is better known, and Hewlett is better known, degree in history and conduct research training in biological primate (with Richard Lee) to Africa to observe at the Dja Reserve observe monkeys. He has keys to understand human behavior was less effective than studying human behavior 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 uncultivated 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 with 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 culturally distinct by comparison to the Ituris and he was unaware 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 graduate 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 Anu’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

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Why Did Scholars

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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 that 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.’ Ethnogeological data centering on the environmental distribution of wild yams have been collected by French and Japanese anthropologists 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 Mitchel 2008), and possibly beyond 200,000 years ago (Mencader 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 (Mbuk) 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; Lupo 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,
rates with farmers? have never lived in light of the ubiquity of 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 that 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 relationships 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-governmental 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; Yatsuoka 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.

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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 Kishuk, 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
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-collate 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 Mbati 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.

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exploited by conservationists migrating to the forest. The existence of forest foragers is contingent on human dynamics, economic, and political factors, and the majority of the oral histories of forest foragers given by research traditions of the world are repurposed with new opportunities.

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