EXPLORATION RANGES OF AKA PYGMIES OF THE CENTRAL AFRICAN REPUBLIC

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A study of 109 Aka pygmies of the Central African Republic was aimed at their individual mobility and the exploration of the area in which they live that takes place over their lifetime. We were unable to fit the data to equations earlier suggested for 'neighbourhood knowledge', but found instead a negative exponential function of distance was a good description of the probability of a person ever having visited a given place. A 'half-range' is defined and evaluated as the median distance of places visited, a measurement of the 'exploration range'. The half-range is found to vary with age, sex, ethnic affiliation, locality, and also shows extensive individual variation within these criteria. Reasons for travel are primarily for visiting family, next for hunting/gathering or dance, and finally and only to limited extent for work connected with village life. Acculturation seems to bring about substantial sedentarisation, and this to be more important than the difference in incidence of farming between what we call acculturated and non-acculturated pygmies.

Very little information exists on the extent of an individual's knowledge of his surrounding geographical area and his movement patterns within it. Anthropologists have defined certain geographical boundaries of human populations, such as the hunting-gathering territory of a band or the catchment area of a population; yet the geographical area which an individual has some probability of visiting in his lifetime, a concept we call exploration range, has not been investigated. Obviously, the hunting-gathering territory would be part of an individual's exploration range, but what is the full extent of the exploration range, how often does one move about within the range, and why does one explore such a range?

The concept of exploration range is similar, in general, to that defined by Boyce *et al.* (1967) as neighbourhood knowledge. The authors developed a specific mathematical model which they used to predict the distribution of marriage distances. Several papers (e.g. Swedlund 1972; Fix 1974) invoke the concept of neighbourhood knowledge. The first, however, makes this concept synonymous with marriage distance, a related but not strictly identical variable. In fact, this lack of distinction destroys the purpose for which the model of

Man (N.S.) **17**, 418–30

Boyce *et al.* was created. Fix makes the distinction and obtains data for both relationships on a sample of Semai, but those on neighbourhood knowledge are not used to test the specific mathematical model suggested by Boyce *et al.*

This article quantitatively investigates the extent of the exploration range, reasons for movement and frequency of movement among a contemporary hunting-gathering population, the Aka pygmies of the Central African Republic. The study sought information from Aka on: the area of land visited by an individual, why a certain place was visited, and the frequency, classified as 1, 2, 3, 4, 5, many (= more than 5), of the individual's visits. Information on mating distance and its relationship with data on visits to specific places is analysed elsewhere (Cavalli-Sforza & Hewlett 1982). 'Exploration range' is preferred to 'neighbourhood knowledge', similar as these are, because the latter is at present associated with a specific mathematical model which we found impossible to apply to our data. We define 'exploration range' through the distribution of the probability of a person ever having been at a locality at distance x from the camp of residence. We also indicate measurements of the range which are independent of the specific model used for describing it.

Data collection occurred in two stages. The first data on forty-one Aka men associated with the Bagandou area was collected in 1977, during work on the African Psychological Differentiation Project (van de Koppel 1977). This represents about 20 per cent. of the adult male Aka associated with the Bagandou area. Bagandou Aka were questioned about their ever having visited forty-three places (see fig. 1). The data were limited in that interviews were done in the Aka village camps with men who happened to be there at a particular moment; and questions about travelling to a particular place suggested only three possible reasons, namely hunting-gathering, family visits and bride service.

The second stage of data collection took place in 1980, for sixty-eight male and female adolescent and adult Aka associated with the N'Delé area in the southwestern sous-prefecture of Bambio. Individuals were chosen by standard random sampling procedures from the total population of which an advance census had been taken, and represents 35 per cent. of this population. N'Delé Aka were questioned about visiting seventy places (see fig. 1). Nineteen of the sixty-eight Aka from N'Delé have discarded their Aka clan name and language and see themselves as Bofi villagers, even though a large percentage (44 per cent.) have no fields of their own. The Nigritic Bofi are one of the many ethnic groups of village farmers in N'Delé. These transitional Aka call themselves Bofi, villagers call them Babinga (pygmy) Bofi, and in this article they will be referred to as Bofi-Aka.

Criteria for selection of places on the questionnaire included: (1) whether the place could be mapped; (2) whether Aka would be likely to have heard of the place (if it were known to the senior author that Aka lived near, or had been known to work at a particular place, it was assumed that other Aka might be

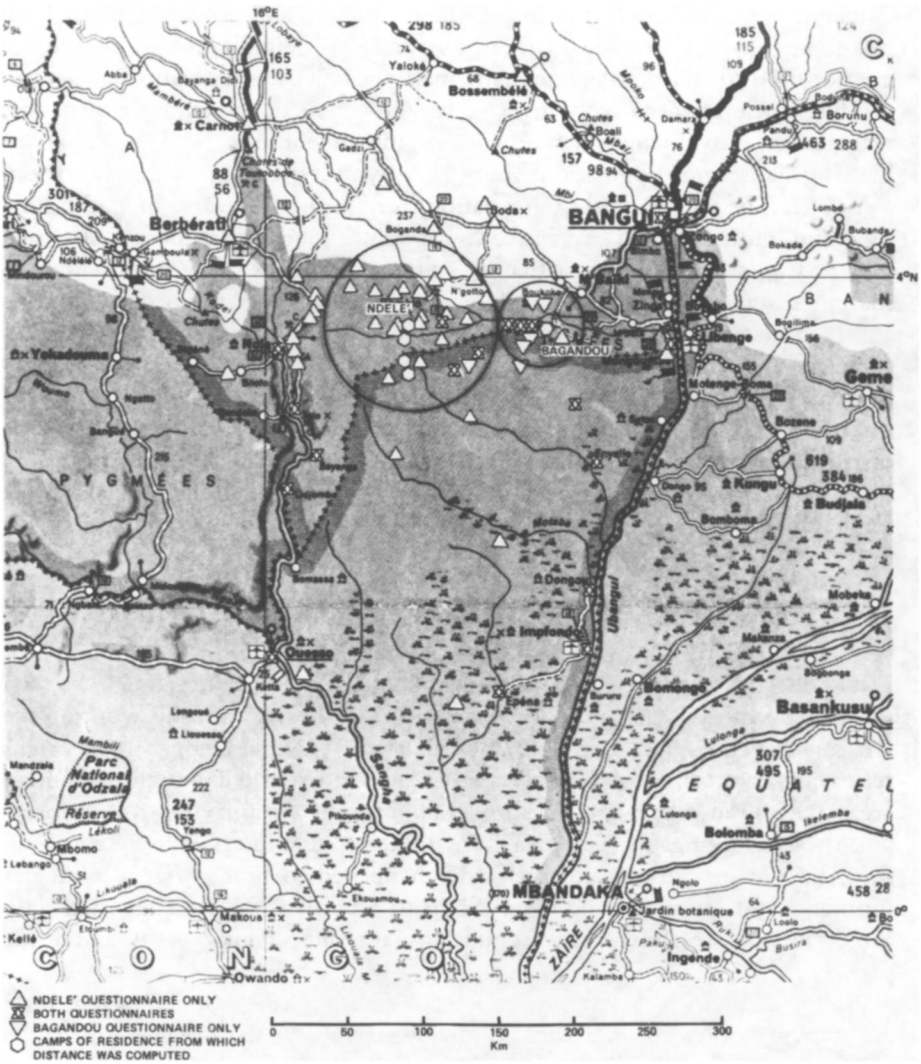

FIGURE 1. Approximate locations of most places on the Bagandou and N'Delé questionnaires, with the large circles around N'Delé and Bagandou indicating the mean half-range of all N'Delé Aka males (excluding Bofi-Aka) and Bagandou Aka males.

likely to know of it); and (3) a few well known distant places, such as Brazzaville, selected simply to see if anyone had ever travelled such a distance. The distribution of sites, as we shall see, turned out to reflect Aka visiting customs fairly accurately. Places selected included villages, sites where rivers cross trails and traditional camps.

The distances travelled were calculated as a straight line from the camp or village at which the informant was interviewed, defined as the camp of residence, to the place visited. Obvious imperfections exist in such an 'as the crow flies' distance. Aka often use forest trails between villages and camps and none of these trails is straight. For example, the straight line distance between N'Delé

and Bambio is 33 km, whereas educated Yanguere villagers give 45–50 km as the minimum distance by trail. Despite these shortcomings the 'as the crow flies' method gives results highly correlated with road distances (Crumpacker *et al.* 1976) and was selected as the system of measure.

Relationship of proportion of places visited and distance. Figures 2 and 3 show the expected and observed relationship between distance and the probability of N'Delé or Bagandou Aka visiting a place at a given distance. The p value in the ordinate is the proportion of places visited within a given distance interval (0–25, 26–50, etc.) from the camp of residence. For instance, if there were nine places within a 25 km radius of a camp, and an Aka visited six of them, p = 6/9 = .67. Proportions are averaged over all pygmies studied.

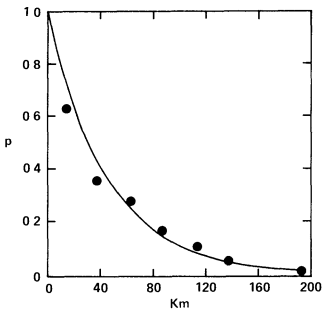

FIGURE 2. Abscissa: distance from place of residence in kms. Ordinate: distance shown in abscissa has been visited at least once by Aka pygmies in the Central African Republic. The curve drawn is $p = e^{-x/43}$.

Figures 2 and 3 show that the probability of having visited a place at distance x is given reasonably well by a negative exponential function of distance:

$$p = e^{-x/k} \qquad (1)$$

where p is probability, x is distance and k is a constant measuring mobility (the greater, the more mobile an individual or group is). The theoretical curves shown in figs 2 and 3A were obtained by fitting equation (1) to the data, using maximum likelihood procedure. The simplest geographic way of testing the validity of exponential relation (1) is to plot p on a logarithmic scale, leaving x on a linear scale, as was done in fig. 3A. Under such conditions (1) becomes a

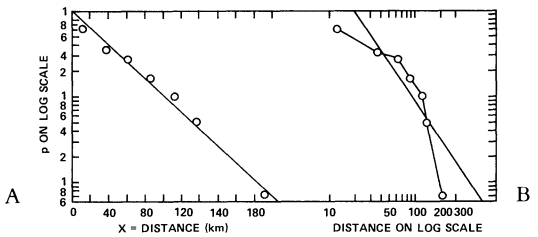

FIGURE 3. The data of fig. 2 (probab. of visit versus distance) A. on a logarithmic ordinate (left) and B. a bilogarithmic plot (right), showing that the data are reasonably represented by a negative exponential, as the curve given in the text as (1), but not by the Pareto distribution used in neighbourhood knowledge theory.

straight line going through the origin, and -k is the slope of the straight line. Figure 3A shows that a satisfactory fit is obtained. By contrast, the mathematical theory of neighbourhood knowledge by Boyce *et al.* uses a relationship which would give a straight line when both p and distance are plotted on log scales. The bilogarithmic plot of the data shown in fig. 3B shows that, with our observations, the neighbourhood knowledge theory is rejected. The relevant data in Fix are few and compatible with both relationships. We are aware of no other published data on which this theory can be tested.

It is important, as we shall see, to be able to evaluate individual mobility. A statistic, simple to use, is the *median* of the distances of the places visited. This can be calculated for every individual, or also on pooled data. It is robust in that it is relatively insensitive to exceptionally distant visits. Experience with the distribution of mating distances indicates that these distributions may be very skewed (for example, Cavalli-Sforza 1963) and so might be the distribution of distances of places visited. The arithmetic mean or other statistics in such cases would be far less satisfactory. We thus propose to call *half-range* the median of the distances from place of residence to places visited at least once. If the exponential relationship (1) is valid, then the half-range can be estimated by setting $p = 0.5 = e^{-x/k}$. Therefore the half range, $X_{1/2}$ can be computed if k is known from:

$$X_{1/2} = 0.693k \qquad (2)$$

This method of estimating the half-range is equivalent to taking the median of the distances of the places visited, but is probably less biased, if the distribution is close to an exponential and maximum likelihood fit is used. In our case we were interested in testing, at least graphically, the validity of the relationship (1) for each pygmy, and we have estimated the k value by fitting (1) with maximum likelihood for each individual. The k value computed for all pygmies pooled is 43 km (fig. 2) and corresponds to a half-range of 30 km. This means an Aka from N'Delé or Bagandou would have a 50 per cent. probability of having visited a place 30 km from his camp of residence, as is also visible graphically in figs 2 or 3. For comparison of the half-range with the arithmetic mean of distances travelled, the mean of distribution (1) is k, and thus the mean range is $1/0.693 = 1.44$ times the median or half-range.

Another especially simple way of measuring mobility is to count the number of sites visited by an individual out of those listed in the questionnaire. This quantity is plotted in fig. 4 against the half-range. There is clearly a very close correlation between the two, although not a linear one. Given the irregularities in the geographic distribution of the places visited by pygmies, the expected relationship between the two quantities is not simple, and will not be further discussed here.

Individual mobility and its variation with age, sex, ethnic affiliation and locality. Every Aka has his or her own pattern of mobility, and we have used the previously defined half-range as a measurement. Although normally this may be an unnecessary complication, we have estimated k for each pygmy by fitting (1) with maximum likelihood and then used (2) to obtain an individual half-range. In many cases, interpolation of the distance corresponding to 50 per

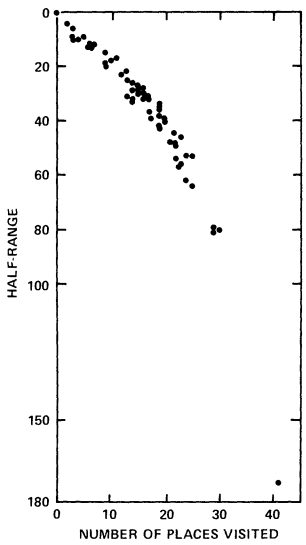

FIGURE 4. Relationship betwen an individual N'Delé Aka's half-range and number of places visited on the questionnaire.

cent. of visits may be equally satisfactory or even necessary. Such an interpolation may be in ways that do not require the validity of (1) making the method independent of the actual distribution of distances.

Tables 1, 2 and 3 give the half-ranges of N'Delé or Bagandou Aka averaged by age, sex and/or group, along with their standard deviation. They indicate that (1) adolescents have seen fewer places than adults; (2) there is a non-significant difference between adults and aged; (3) considerable individual variation exists, especially among males, as indicated by the standard deviations; (4) there are significant differences between N'Delé Bofi-Aka and

TABLE 1. N'Delé half-ranges by age

	n	$\bar{x}$	S.D.	S.E.	t	d.f.
Adolescent	10	15.4	9.2	3.1		
					5.1★	48
Adult 1	40	37.9	19.8	3.1		
					.26	48
Adult 2	10	42	47.9	16		
					.42	16
Aged	8	35.3	5.8	2.2		

★: $p < .01$

TABLE 2. N'Delé half-ranges of adults and aged by sex and group

	Males				Females				t btw.	
	n	mean	S.D.	S.E.	n	mean	S.D.	S.E.	sexes	d.f.
Aka	18	58.3	33.3	7.6	24	32.4	10.8	2.2	3.3★	40
Bofi-Aka	8	22.1	20.1	7.7	8	22.0	8.5	3.3	.01	14
t btw. groups		3.4★				2.6★				
d.f.		24				30				

★: $p < .01$

TABLE 3. Bagandou and N'Delé half-ranges of adult and aged, males only

Group	n	mean	S.D.	S.E.	t	d.f.
N'Delé Aka	19	56.8	33.0	7.7	3.9*	58
Bagandou Aka	41	27.5	12.9	2.0		
					.45	47
N'Delé Bofi-Aka	8	22.1	20.1	7.7		

*: $p < .01$

Aka; (5) there are significant differences between N'Delé Aka males and females; and (6) Bagandou Aka males travel less than N'Delé Aka males.

Table 1 supports to some extent the expectation that distances travelled increase as a function of age, as adolescents state having visited fewer distant places than adults and their half-range is therefore smaller. Three classes of adults were distinguished in the absence of any direct information on age and because of the difficulty of reconstructing it exactly, by using the following criteria:

1. 'adolescent' —pubic hair, menstruation, breasts developed, until time of marriage;
2. adult 1 —individuals from time of marriage (18–20 years) to time when all children live outside parental hut (for men) and menopause (for women);
3. adult 2 —from this age on, but not dependent on camp;
4. aged —individuals dependent on camp subsistence.

The absence of differences between the half-ranges of the last three categories suggests that individual exploration activity might take place mostly between 10 and 25 years of age, and not increase much afterwards; but better age information would clearly make this statement more accurate.

As expressed in the standard deviations in table 2, individual variation of half-range is greatest among males. For instance, among the Bofi-Aka one man has a half-range of 57 km, while another's is zero. The man with a 57 km half-range recently made the Aka to Bofi-Aka transition by marrying a Bofi-Aka woman and moving into the Bofi-Aka camp. He primarily speaks Bofi, yet still uses his Aka clan name. The Bofi-Aka man with zero half-range is a healer (*nganga*) and seldom goes hunting or travels from the village. Individual variation is also evident among N'Delé Aka males where, as outstanding examples, one man has a half-range of 173 km while another's half-range is only 25 km. The total variation, however, is not such as to alter the overall shape of the curve, as would be expected if the variation of individual mobility were very high (Cavalli-Sforza & Feldman 1981: 171).

The significant differences between N'Delé Bofi-Aka and Aka suggest that the 'acculturation' of the Bofi-Aka involves not only their discarding the Aka language and clan names for a Bofi identity, but also their becoming more sedentary, as Bofi are. A large percentage (44%) of Bofi-Aka have not taken up farming, yet they stay in the village most of the year to work for villagers.

A sex difference in mobility is found for N'Delé Aka and not for Bofi-Aka. N'Delé Aka males are almost twice as mobile as females, as judged from

half-ranges. This pattern contrasts with Harpending's (1976) analysis of !Kung which yielded no differences in mobility between men and women. Among N'Delé Aka, men take extensive trips alone to visit family or hunt while women stay in the camp to care for children. Even though Aka fathers are extremely close to their children and probably spend considerable time with them (Hewlett, unpublished observations), child-bearing and rearing are the principal tasks of women and limit their opportunities to travel.

The variation with age and sex has been examined with another independent procedure, with comparable results. In the course of the African Differentiation study (van de Koppel 1977) Bagandou subjects were asked how far into the forest they had travelled. They indicated the spot and the number of days it would take to reach it. The question was put to ninety-four adults and thirty-one children aged between 9 and 13 years. (It should be noted that there is some overlap as three subjects also participated in the study discussed here.) The overall mean distance was 3.84 days walking. Adults had travelled 4.05 and children 3.19 days. The results were submitted to an analysis of variance. The differences between males and females were significant ($p < .01$) as were the differences between adults and children ($p < .01$). There were no significant interactions. An *a posteriori* test for group differences (Schaffé procedure) indicated that the group of adult males was responsible for the differences, the mean being significantly ($p < .05$) different from the means of the other three groups which did not differ from one another.

Table 3 contrasts mean half-ranges of Aka males from two localities—N'Delé and Bagandou—and indicates significant differences between Bagandou Aka and non-acculturated N'Delé Aka. A demographic factor related to these differences is population density. The Aka population density in Bagandou is almost double that of the N'Delé area, .031 Aka per km^2 in Bagandou as against .017 Aka per km^2 in N'Delé (Cavalli-Sforza, unpublished data). This suggests N'Delé Aka have to go farther than Bagandou Aka to meet the same number of individuals. The exploration range-population density relationship seems to fit well with expectations generated by the so-called 'magic number' for hunter-gatherer regional groups or band-aggregates (Lee & DeVore 1968). The average size of the regional group of hunter/gatherers is 500 persons, which is believed to be optimal for communication and breeding. It shows remarkably little variation in widely different hunter/gatherer groups, and this constancy has been responsible for the designation 'magic'. It is possible that the exploration range is stretched further when population densities are lower, in an attempt to have contact with a greater number of people. In order to compensate entirely for the difference in density, the square of mobility (computed as a half-range) should be inversely proportional to population density. Here, N'Delé people should have a mobility $(0.031/0.017)^2 = 3.3$ times greater than that of Bagandou people. It is only twice as large in fact, but the density figures are affected by some error. Moreover, compensation does not have to be entirely successful.

Table 4 gives the number of times Bagandou and N'Delé Aka (including Bofi-Aka) visit the places listed on the questionnaire. As is evident, the greatest percentage of Aka visit a place either once or else many times.

TABLE 4. Frequency with which a place is visited.

	Frequency of visit					
	1	2	3	4	5	many
Total number of visits by 68 N'Delé Aka	380	121	56	17	24	477
Total number of visits by 41 Bagandou Aka	130	60	27	13	9	69
N'Delé relative frequency	.353	.113	.052	.016	.022	.444
Bagandou relative frequency	.422	.195	.088	.042	.029	.224

Some of the differences between N'Delé and Bagandou data are also due to differences in the type of places selected for the questionnaire. In the Bagandou survey, which served as a pilot for the N'Delé survey, Aka were questioned about visiting forty-three places, yet only one of these represented a locality within Bagandou Aka hunting-gathering territory (determined by the fact that over 50 per cent. of the visits to this place were made for the purpose of hunting and gathering). N'Delé Aka were questioned about visiting seventy places, five being located within their traditional hunting-gathering territory (and indeed over 50 per cent. of the visits to these five places were made for the purpose of hunting and gathering). Since Aka travel often to traditional hunting-gathering areas and the Bagandou questionnaire had only one location within the traditional hunting-gathering territory while the N'Delé questionnaire had five, one can understand why N'Delé Aka had a greater percentage of 'many' visits than Bagandou Aka.

Table 5 shows the relationship between the frequency of visits and reasons given for the visits. It suggests that Aka travel repeatedly to a place for hunting-gathering or dancing, while they are likely to make only one or two

TABLE 5. Relationship between frequency of visits and purpose of travel in N'Delé.

		Family	Hunt	Dance	Transport meat	Porter for Villager	Working in Coffee	Other work
Frequency	1	182	26	30	34	36	38	11
	2	43	18	6	18	15	13	4
	3	32	5	2	3	3	5	3
	4	10	2	1	0	2	1	1
	5	15	5	0	0	1	1	1
	Many	201	150	73	0	10	7	11
Percent of 'one visit'		37.7	12.6	26.8	61.8	53.9	58.5	35.5
Percent of 'many visits'		41.6	72.8	65.2	0	14.9	10.8	35.5

visits during their lifetime to a place for the purpose of working for villagers, such as transporting game meat for entrepreneurs, transporting a villager's bags, or working in a coffee plantation.

Purpose of travel. The concept of half-range suggests random movement in any direction from a camp, but this obviously does not occur. Human behaviour is not random; the expectation of visiting a particular place is based upon a purpose. Table 6 lists the purposes given by Bagandou and N'Delé Aka for

TABLE 6. Purpose of travel to given place.

	Total number of visits by one Aka at least once to a place for a given reason			Relative frequency		
Purpose of travel	Bagandou	N'Delé (primary purpose)	N'Delé (secondary purpose)	Bagandou	N'Delé (primary purpose)	N'Delé (secondary purpose)
Visit family	250	483	0	.812	.449	0
Hunting-gathering	39	206	5	.127	.192	.075
Dance		112	10		.104	.149
Transport meat		55	0		.051	0
Porter for villager		67	4		.062	.06
Work in coffee		65	4		.06	.06
Other work		31	4		.029	.06
Bride service	19	2	8	.062	.002	.119
Trade		28	5		.026	.075
Walk around/look for men or women		20	26		.019	.388
Other		6	1		.006	.015

visiting a specific place. The Bagandou data are more limited as Aka there were restricted on the questionnaire to three possible reasons. At N'Delé pygmies could give both a primary and, if desired, also a secondary purpose for their visits.

Visiting family was the chief principal reason given for travel among both Bagandou and N'Delé Aka. When asked about visiting a place, Aka would explain that they travelled there simply to walk around, *tambula*, and drop in on kin and close friends. Aka also visit family to attend a deceased relative's mourning ceremony or to visit ill relatives. Table 7 reinforces the significance of family visits. If one excludes 'acculturative' reasons for N'Delé Aka travel in the Table, then of the remaining traditional purposes of travel, Aka would travel the greatest distances to visit relatives.

Hunting and gathering is an additional primary reason for travelling to a specific place among both Bagandou and N'Delé Aka. Aka travel regularly to certain places for net-hunting, spear hunting for pig, searching for honey, caterpillars, *koko* (*Gnetum sp.*), and so on. Table 7 indicates that among N'Delé Aka these hunting-gathering areas are all well within their 37 km half-range.

Travel as a consequence of working for villagers represents an important reason for N'Delé Aka movement (20.1 per cent. of total) only if one accumulates the four following reasons, valid for both men and women: (1) helping entrepreneurs transport meat they have traded from Aka to large town markets; (2) carrying the numerous bags of local villagers when they visit the

TABLE 7. Average distance N'Delé Aka travel to a place for given reason.

	Reason for travel									
	Family	Hunt	Dance	Transport meat	Porter	Coffee	Other Work	Bride Service	Trade	Other
Average distance (km.)	47 6	22 8	17.6	72.4	57.3	75.9	60.1	25.0	34.8	22.1
Standard deviation	30.6	15 0	19.6	36.9	25.9	36.0	29.1	17.7	29.1	17.4

large towns and cities; (3) travelling to large coffee plantations to work for Europeans or villagers; and (4) travelling to places for various other sorts of work, for example, to be Fulbe or Tchadian's servant or work with a lumber company locating mahogany trees. Work related travel is usually to commercial centres in the savanna, semi-forested areas in the north and west (such as Boda, Berberati, Nola or Salo), whereas the other purposes for N'Delé Aka movement take them to the south and east. Table 7 also indicates that N'Delé Aka travel their greatest distances to work in some capacity for villagers, but as shown previously in Table 5 they seldom return to a particular place to work for a villager. N'Delé Aka travel these great distances to unforested areas to improve their socioeconomic status or to perform a task for their villager 'patron', but it seems as if once Aka have some experience with such life they prefer not to return.

Aka like to dance and do so frequently in the forest or village camp, but also occasionally (10.4 per cent. of N'Delé total visits) travel to certain locations where Aka from numerous bands come together for a festival. Even though these large dances are held near villages, the dances are for Aka and are Aka in nature. The N'Delé Aka mentioned the *elanda* or the dance to *dzingi* (forest deity) as the principal dance at these large gatherings. Table 7 suggests N'Delé Aka travel relatively short distances to go to a dance.

Trade with villagers is an integral part of every Aka adult's daily life, yet a relatively small percentage of N'Delé Aka visit a given place for trade purposes. The majority of Aka trade is done with local N'Delé villagers, although when they travel to distant places in the forest to visit family, for example, they have the opportunity to visit new villages. Aka described visits to new villages to make traditional exchanges, such as game meat for manioc, *koko* for village products or game meat for palm oil.

Some Bagandou Aka and very few N'Delé Aka mentioned visiting a place to do bride service or to get married as a principal reason for travel. More N'Delé Aka listed this as a secondary reason, usually giving visiting family as the primary purpose.

As a primary purpose of travel only a few N'Delé Aka (1.9 per cent.) mentioned travelling to a place to walk around and look for women or men, but those N'delé Aka who frequently gave a secondary reason (38.8 per cent.) also listed looking for men or women. It is worth noting that eighteen of the twenty-eight Aka (64 per cent.) who gave this reason as a secondary one also gave going to a dance as their primary reason. These Aka obviously feel that dances are favourable places for finding partners. Miscellaneous reasons for N'Delé Aka travel included going to a place to acquire clay bowls, to obtain a dog, and to seek European medicine for a sick child.

The exploration range defines, in terms of probability of ever having visited a given place, the area covered during one's lifetime. We were not able to make accurate estimates of the effect of age, but the indication is that much of the

exploratory activity takes place in the early part of life. The range thus defined is also the area in which socialisation occurs, social contacts take place, and important events such as meeting a future spouse occur. The relation between the exploration range and mating distance will be examined elsewhere (Cavalli-Sforza & Hewlett 1982).

We find the negative exponential offers a good representation of the relation between the probability of having visited a place and distance. There is, however, substantial variation in individual mobility, as measured by the half-range, or median distance of places visited. Apart from variation with age, which after adolescence does not seem important, there is considerable variation with sex (females being less mobile, but only in less acculturated groups), with degree of acculturation to village life (which more than halves the half-range), and with locality (as N'Delé Aka have to travel farther than Bagandou Aka to meet the same number of individuals due to different population densities in the two localities). There is also an extensive individual variation. It is possible that the mobility of individuals is not exactly represented by an exponential but by a curve slightly convex upwards in a semi-logarithmic presentation, but the convexity tends to disappear, averaging over many individuals, each having a different, slightly convex curve. A complicating factor is introduced by the fact that Aka pygmies change camps of residence. We chose the camp at which they resided at the time of the survey as the centre from which distances were computed for the estimation of half-ranges. For the purposes of compiling tables 4–7, distances were from the village with which they are associated, N'Delé or Bagandou, but the difference is in practice trivial, since most camps chosen were not far from the village with which they were associated (see fig. 1).

Visiting family is the most important reason for travel, hunting-gathering the second, but is limited to a few traditional hunting territories, where they go very often. Dances are another important reason, and dancing places also are few and very frequently visited. Among indicators of the degree of what is called here acculturation, an important one is the reduction of the half-range, especially of males who have discarded Aka identity. Some men, however, have travelled extensively before deciding to become sedentary Bofi-Aka. It is very interesting that the incidence of farming is not significantly higher among the acculturated Aka than the non-acculturated ones, as measured by the relative frequency of those who have plantations of their own. Another indicator of the overall degree of acculturation is the relative importance of travel on jobs such as transport of meat, work in coffee plantations and being a porter for villagers. These altogether account for 20 per cent. of all primary purposes of travel, but have much lower importance than the cumulative 20 per cent. would indicate, as shown by the low relative frequencies of 'many visits' for these purposes.

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