

Why Efe Girls Marry Farmers?: Socio-ecological Backgrounds of Inter-ethnic Marriage in the Ituri Forest of Central Africa

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ABSTRACT 1. The degree and the trend of inter-ethnic marriage between the Balese farmers and the Efe pygmy hunter-gatherers of the Ituri forest of central Africa are described and analyzed. At least in some parts of the forest, a very high rate of one-way type intermarriage has been taking place for the past few generations. 2. It is pointed out that there is absorption of the Efe women into the village as a background to the intermarriage. The absorption, by which an Efe woman changes her status to one suitable for a villager's wife, is ascribed to the *efe-maia muto-maia* relationship which forms the core of the symbiotic relationship between the Balese and the Efe. 3. The dependence of the Pygmies on the farm food produced by the farmers is discussed in the light of recent ecological studies. The economic importance of the farm food and the symbiotic system through which the pygmies obtain their everyday staple diet also described. 4. Thus the *efe-maia muto-maia* relationship plays a dual role. One is to enable the Efe women to be absorbed into the village and available for the Balese men, and the other to sustain the Efe's subsistence. 5. On the level of individual economic exchanges, the farm food and the Efe women are not related directly. However, from the viewpoint of the total socio-ecological system, the farm food produced by the Balese and the Efe women are exchanged. 6. The imbalance of economic exchanges between them which has been often pointed out so far, would become more understandable only by broadening our scope of the symbiotic model to such an extent as to include the Efe women's labor and reproductive value.

INTRODUCTION

It is common that farmers or pastoralists occasionally take wives from hunter-gatherers with whom they have close contact, and it may be pointless to investigate the reason as long as the degree of intermarriage is on an occasional level. Personal motivations may surpass others. We should ask, however, the reason from social and ecological points of view, rather than from the viewpoint of personal motivation, when the degree of intermarriage is so high that it has considerable influence on both parties involved. Especially when the intermarriage is a one-way type, that is, always one group taking women from the other without reciprocation. This is the usual pattern of intermarriage between hunter-gatherers and non-hunter-gatherers, suggesting there must be some important socio-ecological basis behind the phenomenon.

There seems no other area where inter-ethnic marriage between hunter-gatherers and their non hunting-gathering neighbors has been taking place more frequently and steadily than the Ituri forest of Zaire, where some Bantu and Suda-

nic agriculturalists marry Pygmy women.⁽¹⁾ Almost every researcher from the early days up to the present received strong impressions of the admixture of Pygmies and non-Pygmies, and left comments on this. For example, P. Schebesta, who carried out a pioneer research of the Ituri forest from 1929 through 1930, expressed as follows:

"In the course of traversing the Balese forest, I was surprised to observe that, the more I proceeded southward, the more striking was the resemblance between the negroes and the Bambuti. There can be no doubt that in these regions the races are very much mixed—a fact admitted by the negroes themselves. I frequently heard the inhabitants of one village assert that all the people in the neighbouring one were Bambuti. Of course this was an exaggeration, but it showed the recognition of the fact that the more southward one went the more obvious were the evidences of a mixed strain." (Schebesta 1933: 214)

Several factors are given as the reason for negroes marrying Pygmy women by various authors, such as the high fertility of Pygmy women (Schebesta 1936: 137; Putnam 1948: 324); the low cost for marital payment (Putnam *ibid.*: Turnbull 1965: 50); or a historical explanation that "the negroes came into the forest without any women at all, and helped themselves to the wives and daughters of the pigmies." (Schebesta 1933: 215). But why do pygmy women marry negroes? An author suggests that the marriage with a negro means a great rise in the scale of living or that they avoid the hardships of forest food gathering (Putnam *ibid.*). Another, however, says that it is difficult to see what attracts a Mbuti girl to a marriage with a negro except the politically advantageous position in which it places her (Turnbull *ibid.*). It does not seem that any of the factors mentioned above provide a comprehensive explanation of the phenomenon, because they do not explain why the Pygmy men allow the farmers to marry their women. The work of Schebesta (1933), however, examines this question and will be discussed later.

The author conducted anthropological research into the Efe Pygmies and the Balese farmers in Andiri village, located in the northeast part of the Ituri forest, where a high rate of one-way intermarriages have been taking place for some generations. The research from 1978 to 1985 revealed that about 30 percent of the wives of Andiri Balese men were Efe origin. Such a biased intermarriage should have considerable influence on both societies. Especially the Efe, who give their women, may incur severe socio-economic damage, if there were not some reasonable compensations. Some Efe males might have lost the chance of getting married and have been forced to live a difficult single life. Generally in inter-ethnic marriage, the side that receives women is not at a disadvantage, but the side that gives women faces many damages which require reasonable explanations. In Negro-Pygmy case, it is no less important a question of why Pygmy men allow their women to marry farmers than the question of why Pygmy women marry farmers or why negro farmers take pygmy wives. The following explanation given by Schebesta seems to contain some important suggestions. Let us quote Schebesta again:

"It is not so long since the negroes and pigmies were engaged in open warfare

with one another. The little men put up a stout fight against the invasion of the forest regions by the blacks. Moreover, the pigmies plundered the banana plantations whenever the negroes refused to give them what they considered a fair share of the fruit, with the result that on this score alone many fierce encounters took place between the two races. If a negro was killed in such an engagement, all the pigmies vanished for a long spell until forced by hunger they would return. When they did come back the first thing they did was to offer the negroes a pigmy girl by way of compensation, in order to deprecate the vengeance. Whereupon they were permitted to settle down in peace in the vicinity of the village. And that was how the Efe generally came to be parasites on the negroes." (Schebesta 1933: 214)

Such a political marriage never takes place now, and it is unthinkable that many such marriages happened between them sufficient to explain the high rate of admixture of the two ethnic groups. The idea, however, that food, especially farm products, is quite an important, although indirect, cause of the intermarriage, is worth fair consideration. Although explicit raids of the fields by the pygmies do not happen today, "legal raids" or "tolerated thefts," so to speak, take place almost every-day. There is a considerable flow of farm products from the village to the Efe camps such that today's Efe subsistence depends largely on these products. Thus there are two important items. Efe women and Balese farm foods, flowing in opposite directions. The question is are the two flows related to each other in a single socio-ecological system of forest living people, or are they independent.

My conclusions are as follows: they are resulted from a symbiotic relationship. The *efe-maia muto-maia* relationship, the most important socio-ecological relationship between the Balese farmers and the Efe hunter-gatherers, mediates and organizes them. The relation itself is a reasonable system responding from the subsistence and socio-ecological requirements of hunting-gathering and farming lives in a tropical rain forest.

The admixture of Pygmies and non-Pygmies has continually received the attention of genetic studies (cf. Cavalli-Sforza 1986), but with little examination of sociological or ecological aspects. There seemed to be even a negative value attached to such an inter-ethnic relationship including intermarriage for the purpose of studying a "pure" hunting-gathering society (cf. Turnbull 1965). The progress of ecological research on the Ituri forest and the people living there is revealing the intrinsic importance of the mutual relation of farmers and hunter-gatherers in that peculiar environment of tropical rain forest (Bailey and Peacock in press; Harako 1976; Hart 1978; Hart and Hart 1986; Ichikawa 1981, 1983, 1986; Peacock 1984; Tanno 1976, 1981; Terashima 1983, 1985, 1986; Waehle in press). The intermarriage between them should be reconsidered in the light of recent ecological as well as social findings.

THE RESEARCH AREAS

The data for the intermarriages were collected chiefly in the Andiri village near Nduye, and supplemented by the data of Mangala villages in the northeast corner of the Ituri forest. Field research was conducted three times, the first, from August 1978 to February 1979, the second, from August 1983 through November

1983, and the third, from August 1985 through November 1985.

Nduye is a small administrative center of the Balese-Karo, a sud-division of the Balese. From Nduye, a road runs across the forest northeast almost along the Nduye River up to Mambili village some 80 kilometers from Nduye. Here the road bifurcates, one branch going up northwest to Gombari, a small town on the border of forest and savanna, and the other going straight for Watsa, a savanna town (Fig. 1). Andiri is located about 20 kilometers from Nduye, consisting of seven small sub-villages some hundred meters apart. The total population was about 250 in 1985. Around Andiri there were about 200 Efe Pygmies living in some 6 or 7 residential units (bands) in 1985 (cf. Terashima 1985). Now there are no Balese villages in the forest between Andiri and Mambili.

The Balese-Karo extends its distribution from Nduye northeaster to the Mangala villages. The area near Gombari or Watsa is called Mangala because Lingala, one of the national languages of Zaire, is spoken as lingua franca there. On the other hand Swahili is the lingua franca around Nduye and Andiri.

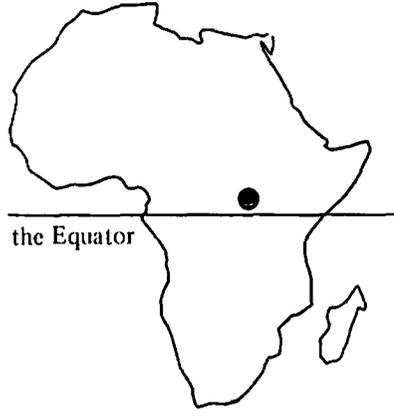
The evergreen tropical rain forest, dominated by such species as *Cynometra alexandri* and *Brachystegia laurentii*, both belonging to Caesalpinioideae sub-family, is the most common vegetation from Nduye to Mambili, but after Mambili grassland patches appear in the forest gradually increasing in size as one travels north.

It is said that the savanna around Watsa was the ancestral place of the Balese-Karo. It was only a few decades ago that Andiri men settled down in the present area. They say that they were in the forest near the source of the Epulu river before getting to Andiri. Many of the Pygmies now living around Andiri were also there with the Balese having arrived together. The Pygmies who came to Nduye and its vicinities with Bales-Karo were called Efe-Karo. The first wave of the Balese-Karo migration into the forest seems to go far back into the past, but we do not have any reliable date. Nduye as well as Andiri Balese have a close relationship with Mangala Balese, and there are frequent comings and goings of the people between the two areas.

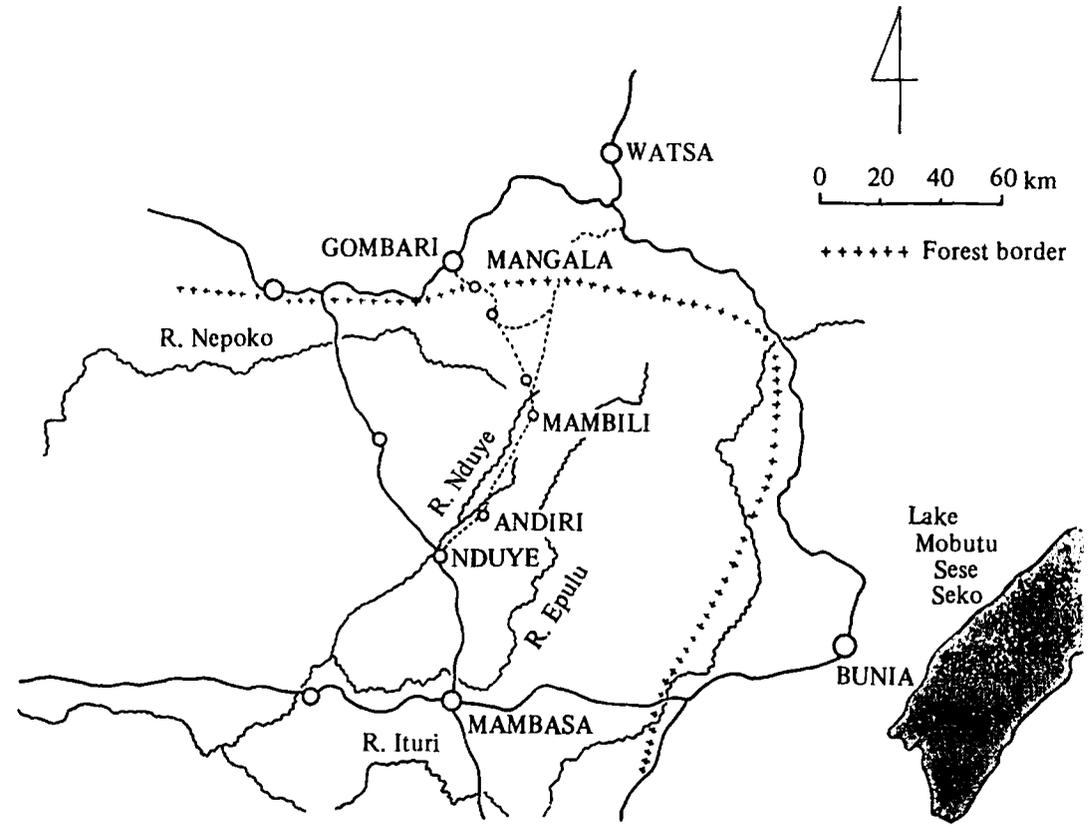
The Balese say there had been no Pygmies in the forest before the Balese entered it. Of course we cannot accept their words without qualification, but the comment surely expresses the feeling of strong dependence of the Efe on the Balese from the view point of the Balese.

INTERMARRIAGE BETWEEN THE BALESE AND THE EFE

Here we briefly look into the marriage data of Andiri and Mangala villagers (Table 1 to 4). Table 1 shows the marital status and the degree of intermarriage of Andiri men and Mangala men in 1985. In Andiri 50 men had 60 wives in total, among which 17 were Efe origin. The intermarriage index (IMI) is calculated by dividing the number of Efe wives by the total number of wives. In the case of Andiri men in 1985, the IMI is 0.28. That is, nearly 3 out of 10 wives were Efe origin. This is quite a high rate compared with other hunter-gatherers and non-hunter-gatherers' intermarriage situations. In Mangala, we obtained a similar result. Forty six males had 58 wives in total including 14 Efe women and 3 women whose origin were unknown. If we calculate the IMI by excluding unknown women, we have a value of 0.25.



the Equator



0 20 40 60 km

+++++ Forest border

Lake
Mobutu
Sese
Seko

Fig.1. The Ituri Forest.

Table 1. Marital status and intermarriage of Andiri and Mangala men in 1985.

	Male status	No.	No. of wives	IMI ^(a)
ANDIRI	one wife	42	42 (14 + 28) ^(b)	0.33
	two wives	6	12 (2 + 10)	0.17
	three wives	2	6 (1 + 5)	0.17
	total	50	60 (17 + 43)	0.28
MANGALA	one wife	37	37 (11 + 24 + 2) ^(c)	0.31
	two wives	6	12 (1 + 10 + 1)	0.09
	three wives	3	9 (2 + 7)	0.22
	total	46	58 (14 + 41 + 3)	0.25

Notes: (a) IMI = intermarriage index = (Efe wives / total wives)

(b) (A + B) = Efe women + Balese women

(c) (A + B + C) = Efe women + Balese women + unknown cases

Table 2. Situation of intermarriage in the parental generation.

Category	No.	(Efe	Balese	?)	IMI
Husbands' fathers	59	(0	59	0)	
Husbands' mothers	62	(11	31	20)	0.26
wives' fathers	89	(32	57	0)	
wives' mothers	91	(46	20	25)	0.41 ^(a)

Note: (a) Balese-Efe marriages/(Balese-Balese marriages + Balese-Efe marriages)
(The unknown cases are excluded.)

Table 3. Marriage status change of Andiri villagers from 1978 to 1985.

	Category	No. of cases (Efe + Balese)
new marriages	first wife	5 (2 + 3)
	second wife	1 (0 + 1)
	remarried	4 (1 + 3)
	total	10 (3 + 7)
divorced		7 (4 + 3)

Table 4. Ethnic background of "Balese" men and women of Andiri.

among 50 BALESE men lived in Andiri in 1985;	33 had BALESE mothers 14 had EFE mothers (3 ?)	(30%)(a)
among 43 BALESE wives lived in Andiri in 1985;	19 had BALESE mothers 1 had a BUDU mother 16 had EFE mothers (7 ?)	(44%)

Note: (a) unspecified mothers are not counted for calculation

Next we need to know whether such a high degree of intermarriage is a trend from the past. Table 2 shows the origin of Andiri husbands and wives the author counted during the three stays in Andiri from 1978 to 1985. This table shows clearly that the degree of intermarriage was as strong in the past. Concerning the parents of the husbands, 59 men had 62 wives including 11 Efe women. An IMI of 0.26 is obtained if the uncertain cases are excluded. For wives' parents, 89 wives' fathers had 91 wives in total, among which 46 were Efe women and 25 were uncertain, only 20 were of non-Pygmy origin. The number of Efe women may seem extraordinary, but this is because the 89 fathers contain 32 Efe fathers who certainly had Efe wives. For the calculation of IMI, we must exclude Efe-Efe couples. Thus concerning the Balese fathers of the present wives, 57 men had 59 wives, among which 14 were Efe, 25 were unknown, and 20 were non-Pygmy. The IMI, however, is 0.41, still very high.

The changes of marital status among Andiri Balese from 1978 to 1985 are shown in Table 3. Ten new marriages and 7 cases of divorce took place. Among the new marriages, 3 cases were marriages with Efe women. Although the proportion of inter-ethnic marriage incidentally corresponds well to the IMI of Andiri mentioned above, we cannot say much on this because the cases are very limited. Among seven divorces, 4 cases were Balese and Efe couples, surpassing the Balese-Balese cases. This suggests that marital bonds might be weaker in a Balese-Efe couple than a Balese-Balese couple, but the cases here are also too limited to generalize.

As it appears clearly in the Table 2, the husbands' fathers are all Balese as well as the husbands themselves. This is because the Balese take into consideration only the father's lineage to decide the child's. Therefore a "Balese" man or a "Balese" woman has a good chance of having an Efe mother. Andiri cases are shown in Table 4. Among 50 married "Balese" men, 14 (28%) had Efe mothers and among 43 married "Balese" women, 16 (44%, if unknown cases are excluded) had Efe mothers. Figure 2-(A) illustrates the ethnic balance in Andiri from the viewpoint of descent. On the other hand, Figure 2-(B) shows the genetic balance. The "Balese" dominates as long as they adopt patrilineal descent ideology while the "pygmitization" of the Balese genetically progresses.

Thus in Andiri and Mangala, such a high degree of intermarriage has been taking place in at least these two generations partly reminding us of the early researchers' impression that Balese is the hybrid of Bantu and Pygmies (Van

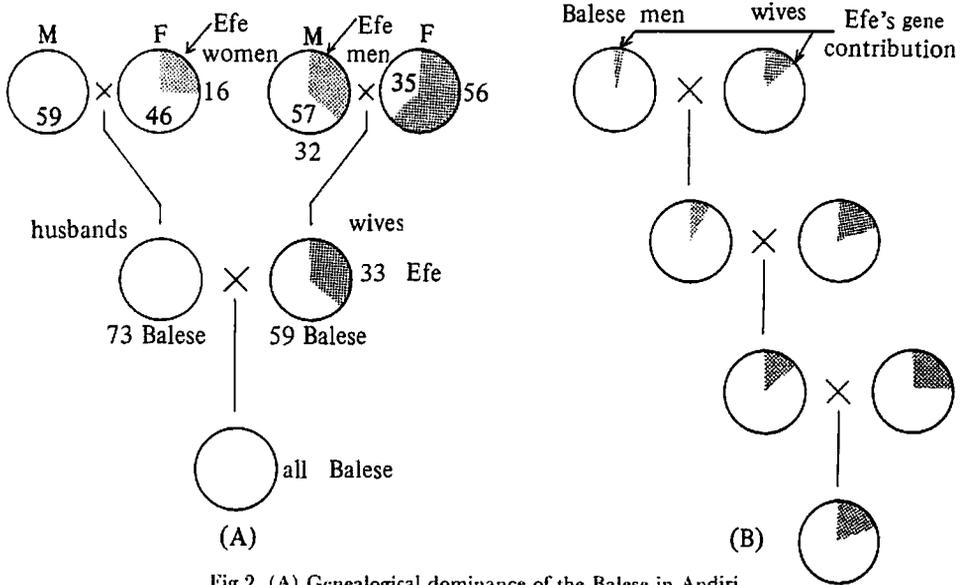


Fig. 2. (A) Genealogical dominance of the Balese in Andiri.
(B) A model of genetic "pygmitization".

Geluwe 1957:97). It is, however, difficult to consider that every Balese group experienced such a heavy intermarriage. The degree of intermarriage surely changes depending on many factors. Andiri cases may be an extreme example. Of course this is not an incidental phenomenon but based on specific socio-ecological conditions. Next we examine the structural basis which produced this phenomenon.

PROCESS AND PATTERN OF INTERMARRIAGE

For an inter-ethnic marriage to take place, two kinds of barrier should be removed, one being physical, the other cultural or social. In the Ituri case, the physical problem is how Balese husband and Efe wife come into contact, and the cultural one is how the difference of social status is removed ideologically.

Almost all Andiri men who had Efe wives said that they had become acquainted with their wives not in the pygmy camps but in some villages. Moreover many of the Efe wives were women so-called "grown-up-in-the-village." When a Pygmy girl grows in a village separated from her parents in her childhood, the Balese refer to her in such a manner. This means that before the beginning of the marital process, those women were already absorbed into the village and this was the device that provided the chance of contact for couples as well as a solution to the cultural problem. The problem to be analyzed is, then, how this absorption of the Efe girls into the village takes place.

There are two patterns of absorption of Pygmy girls into the village. First, there is an institutionalized "growing up in the village." An Efe marriage is legitimized socially either by giving a girl to the wife's kinsmen as his spouse (sister exchange marriage), or by giving a marital gift (bride-price). Sometimes, however, an Efe man has no suitable girl for exchange and also has nothing to pay the

bride-price. In such a case, he may ask a Balese to pay the bride-price for him. The result is that he must give his first daughter to the man who paid the bride-price. This rule applies not only to Efe-Balese cases, but also to Balese-Balese cases. It seems rather that it was originally a rule observed in the Balese society and later extended to the Efe.

By following that rule, an Efe girl comes from the camp to the village and grows up there. In her infancy she stays with her parents in the camp, but around some 10 years old she starts to live in the village under the care of the Balese who paid her mother's bride-price. There is no special term for such a child. She is simply called *ongbe-maia* (my child) and behaves and is treated like a real child. Among the Balese as well as the Efe, the transfer of a daughter among the same lineage members is not rare.⁽²⁾

The Efe girl thus raised in the village in most cases marries a Balese man. The Balese say the Efe girl raised in the village cannot return to the forest life, in the same sense that Balese women cannot live with Efe men in the forest. The Andiri Balese also say that an Efe girl becomes a villager as she speaks in the village manner, behaves like village women, and so on. There is little difficulty for at least Andiri men to marry Efe women as long as they grew up in the village. As mentioned above, the Balese recognize only the father's lineage for deciding the child's lineage, so the child is a full Balese. There seems to be no stigma attached to the hybrid child. For example, a hybrid Balese bride does not have less value than the full Balese brides. In Andiri where 30 to 40 percent of "Balese" were hybrid in fact, it might be actually impossible to discriminate the hybrids. When an Efe girl is married to a Balese man, her Balese father receives her bride-price. This is the final step of the reciprocity circle (Fig. 3). He may lose the bride price, if she marries an Efe man.

The above mentioned pattern is an institutionalized movement of Efe women to the village. The intermarriage is a consequence. Legal adoption, however, is not the only way Efe girls get close contact with the village and become absorbed into

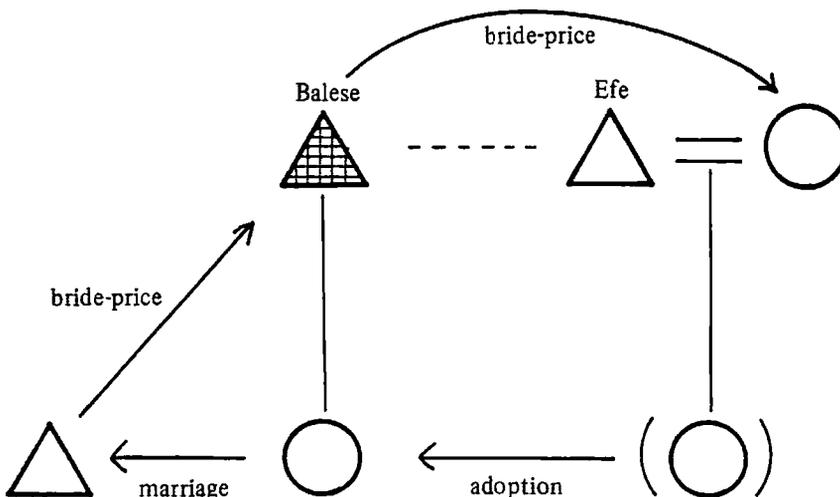


Fig.3. The cycle of bride-price.

it. Another pattern is informal but no less important. It is based on the widespread *efe-maia muto-maia* relationship, so every Efe girl has the opportunity to mix.

This is the core of the symbiotic relationship between the Balese and the Efe. Each Efe has a specific Balese partner called *muto-maia* (my villager) with whom he associates regularly and exchanges various things. The Balese calls his Efe parther *efe-maia* (my pygmy). This relationship is transmitted from father to son on both sides. As I will show in the next section, the Efe's subsistence is greatly dependent on the symbiotic relationship with the Balese. Efe women visit their village partner (*muto-maia*) almost everyday while they stay in near village camps. Their first and most important purpose of the visit is to get farm products such as cassava and plantain which will be the staple foods for their evening meal. When they have some meat of wild game or honey they hunted or collected in the forest, they give some of them to the *muto-maia*. When they have nothing, they come anyway with empty hands, get some food and return to the camps with it. The exchange between *efe-maia* and *muto-maia* is not direct barter trade, but takes the form of gift-giving which is reciprocated only in a vague manner. They say that they do not demand compensations for the items they give to their partners, however they are expected. We often see an Efe woman, who visits the village, helping her *muto-maia* or his wife to do their domestic chores, such as cooking food, fetching water or firewood, repairing the house, etc. Often she works in the *muto-maia*'s fields with his wife. To take this as a direct compensation for the farm food is probably misleading, but it is also true that without such return offering of services it may become difficult to maintain a good relationship with the farmers.

Efe men also come to the village and visit their *muto-maia* frequently, but often with different purposes, or without specific purposes. When the *muto-maia* has something he wants done by the *efe-maia*, he asks it then. For example, bringing a letter to someone in a different village, or fetching something from the forest. Usually, however, the Efe men do nothing particular in the village, only killing time. This is nonetheless important behavior to keep a good relation with his *muto-maia*.

Efe trade with villagers other than their *muto-maia*, too. In most cases, such trades are direct barter of farm food for meat, honey or mushrooms, etc.⁽³⁾ Efe women frequently trade here too. Thus the Efe women visit the village more frequently than men from childhood to get food, and in consequence deepen the connection with the Balese, not only with the *muto-maia* family but also with other villagers. Efe girls sometime stay for some days or weeks in the house of their *muto-maia* for some reason or other. In fact she moves the basis of her life to the village. This is the second pattern that Efe girls become absorbed into the village.

This stay in the village is, of course, not a forced one but depends on her own intention. She can return to the camp anytime, and actually many of Efe girls do. But as the stay in the village becomes longer and more frequent, the chance that she gets attention from the Balese men will increase often leading to marriage. The Balese say it is quite natural that Efe girls like to stay in the village, because of the higher standard of living there. Putnam (1948: 336) makes a similar comment. This pattern of absorption into the village is not a special but quite a common experience for any Efe girl. The extent, however, to which she is absorbed into the village life varies from individual to individual depending on many factors such as the closeness of the relationship with *muto-maia*, personality of the girl, etc.

These two patterns of Efe women's absorption into the village are entirely different in their initial motivation, but the results are similar. On the one hand, in the first type of absorption, the Efe girl usually goes to the house of *muto-maia*, because the man who paid the bride-price of her mother is very likely her father's *muto-maia*. On the other hand, between *efe-maia* and *muto-maia*, the relationship is considered within a kinship framework, using the kinship terminology. Although there is no blood relationship between a Balese man and his *efe-maia*'s daughter, he calls her *ongbe-maia* (my daughter) and she calls him *afa-maia* (my father). Thus without legal adoption, the daughter of *efe-maia* is regarded as a *muto-maia*'s daughter. The Balese has a right to care for her, and there is no difficulty for the Efe girl in her staying with her *muto-maia* family for a long time, even without any specific reason.

Thus it is clear that the intermarriage between the Balese and the Efe has close connection with *efe-maia muto-maia* relationship, and the latter is, in turn, the core of the symbiotic relationship between the two groups. Next we are looking into socio-ecological meaning of the *efe-maia* and *muto-maia* relationship or more broadly the symbiotic relationship between the farmers and hunter-gatherers in a tropical rain forest of central Africa. The meaning of the intermarriage will be re-considered in that context.

DISCUSSION: SOCIO-ECOLOGICAL BACKGROUNDS OF THE "WOMEN-FOOD" EXCHANGE

Almost every researcher from classical anthropologists such as Schebesta and Putnam to modern ecologically orientated researchers, has been pointing out the dependency of the Pygmies on food produced by the farmers. The question is when, why, and how such a situation appeared. It is said so far, that the Pygmies were the original occupants of the Ituri forest, and the farmers such as the Balese or the Bira came into the forest afterwards. There is no information about the exact date of the migration, but it seems to have occurred several hundred years ago. Until then, the Pygmies lived independently in the forest by hunting and gathering. Many introductory books to African History (Oliver, R. and J. D. Fage 1985, Murdock 1959; etc.) mention a similar picture in the history of the vast tropical rain forest that extends from the coastal area of the Gulf of Guinea to the central part of Africa.

The anthropological studies of Bushmen intensively carried out in these few decades offered a new paradigm for the study of hunter-gatherers. One point relevant here is the emphasis given to the importance of the gathering activity. It is said that the gathering of wild plant food is much more important than the hunting of wild animals. This is the basis of subsistence among most hunter-gatherers who live in low and middle latitudes (Lee 1968). This is because gathering is more stable and reliable than hunting. Certainly the !Kung Bushmen of Dobe area depend greatly on wild vegetable food such as a famous *mongongo* nut (*Ricinodendron rautanenii*) (Lee 1979). In the case of the Central Kalahari Bushmen, two kinds of beans (*Tylosema esculentum*, *Bauhinia petersiana*) play an important part in their subsistence (Tanaka 1980).

The situation is, however, different in the Ituri forest. The Pygmies rely on

farm food rather than gathered wild plant food. Although they say there is enough food in the forest, no Pygmy groups have ever been observed living independent of farm products. Of course, they live occasionally without farm food, for example, when the village itself runs out of farm food because of natural disaster, or during the honey collecting season.⁽⁴⁾ But they do so only because they are unable to obtain food from the village. Even in the honey season some demand for farm food exist.

The degree of the dependence of the Pygmies on the farm food is quantitative-ly demonstrated by several recent studies. For example, Bailey and Peacock (in press) show that about two thirds of the calorific intake of the Efe who live some 60 kilometers north of Nduye came from farm food. Ichikawa carried out intensive research into the subsistence of net hunters who lived in the southern part of the Ituri forest. Net hunting is a very effective method for getting game meat involving not only men but also women. According to Ichikawa (1983, 1986), the band he studied in 1975 killed 895.3 kg of animals during 27 days. This is almost equivalent to 805,500 kcal or about 30,000 kcal a day, taking the wastage ratio as 0.4 and calories per 100g of edible meat as 150 (Ichikawa 1986:167). The 30,000 kcal can support 15 adults taking the daily calorific requirements of an adult to be 2,000 kcal. In fact, there were 45 people including 26 adults. So the net-hunting alone could barely have sustained the whole camp. To ensure their subsistence the net hunters exchanged meat for farm food thus giving the Pygmies about three times more calories than expected from the meat alone. In fact, nearly half of the meat was exchanged for farm food. It is very suggestive that even very successful net hunters could not do without additional farm food.

Then, why is the demand for farm food, not wild plants? One reason is that the farm food usually costs less in terms of labor expense than the wild food. The cost is divided into two parts. One for searching and taking the food to the camp, and the other for preparing and cooking. The latter cost for wild plant food is usually higher than for cultivated food. If there is plenty of wild plant food in the forest as supposed by some anthropologists such as Turnbull (1965), the first cost would be very low and may compensate for the higher cost of the preparing and cooking. A recent study, however, of the food plants in the Ituri forest gives a contrasting result to such an assumption. Hart and Hart (1986) say that there are no wild plant resources which can substitute for the farm products on which the Pygmies now depend. Although the Pygmies know and use various kinds of wild plants, it is usually only in limited quantities and for a limited period. This is due to the scarcity of the food plants and the seasonal variation in availability. They point out, moreover, that many of the food plants they use now are likely to be found in open places such as abandoned fields. This means that the current plant food availability may be higher than before the immigration of the farmers took place. Nevertheless, as mentioned above, there are no wild plant foods which can compete with farm foods. From these observations they propose the hypothesis that evergreen tropical forests of the Ituri were essentially uninhabited until recently. The Pygmies would have lived instead in environments where energy-dense plant foods were more abundant such as towards the savanna border (Hart and Hart *ibid.*).

Another report also observed the lack of plant food in a tropical rain forest of southeast Asia. Griffin (1985) studied the value of the tropical rain forest of the

northern Luzon island of the Philippines as the subsistence environment for the negrito hunter-gatherers. He concluded that "the humid tropics may be game rich but plant-food poor environment (Griffin 1985:96)." In such an environment, hunting and gathering would be an effective way of subsistence only when the population density remains very low. If the population density increases beyond a certain level, it would be quite difficult to maintain the population by hunting and gathering alone.

The population density of the Pygmies in the Ituri forest is estimated at nearly 0.5 person per square kilometer (Ichikawa 1980: 133). This is the highest among the African Pygmy groups, varying from about 0.1 to 0.5 per square kilometer (Cavalli-Sforza 1986: 25, 369). The latter numbers are, in their turn, considerably high compared with that of other hunter-gatherers such as the Bushmen, or the Australian Aborigines. It is reported that their population density is usually under 0.1 per square kilometer (Hitchcock 1982: 249; Lee 1979⁽⁵⁾; Yengoyan 1968). It is possible that the high population density of the Pygmies, especially of the Ituri forest, is due to the food obtained from the farmers (cf. Cavalli-Sforza *ibid.*). So, the population density may have been much lower before contact with the farmers, if it is true that they existed independently in the forest.

Although the conditions described above seem to suggest the difficulty of the hunting and gathering life in the forest without farm food, it is too early to give any decisive picture of the forest past. Climatic changes may have altered the vegetation type, as suggested by Hart and Hart (*ibid.*). If so, it would be nonsense to reconstruct the past according to present ecological conditions. The state of the food plant distribution in other parts of the forest should be researched extensively. For example, the northern part of the Ituri, where many Efe Pygmies live, has many rocky hills where the forest partly breaks and offers a suitable habitat for the growth of some kinds of edible wild yams (Hladick et al. 1984). Actually Efe Pygmies, as well as some Andiri villagers, gather such wild yams frequently, which may increase the possibility of the pygmy's independent forest life. There may have been plants, not used today, which had high nutritional values for hunter-gatherers. The question of the past life style of the Pygmies is quite open now. We should, however, widen our scope for the ecological assumptions. There is no evidence to deny the pygmies' need for farm food, although the degree of necessity may vary from time to time and from place to place. At least it seems reasonable to start from the assumption that the arrival of the farmers in the forest brought the possibility of a new life style which might have been favorable for the Pygmies.

The first contact with the farmers offered the Pygmies the possibility of obtaining farm food. After that, the most effective foraging strategy would have changed to obtain the energy resources not from wild plants but from energy-dense farm food, so long as the latter was available for them. This is just the strategy most Pygmies, the net hunters as well as the Efe, adopt today. How did they achieve this without using adverse methods such as raiding? Instead they depended on friendly relationships. Several options would have arisen. One was to increase the production of meat or honey for which the farmers had a strong demand. The difficulty, however, is that the game meat or honey is not always available to the Pygmies. They can get them sometimes, but not everyday. As mentioned above, even successful net hunters face the instability and unpredictability of this method. The game meat and honey are so to speak "prestige food"

(Peacock 1984), because they are characterized by a high value either in a cultural or nutritional sense, and also by uncertainty. On the other hand, the Pygmy's need for farm food as their primary source of calories is an everyday matter.

Two ways to cope with this situation can be supposed. One is to establish a credit system which mediates the exchange of stable basic products and unstable but highly valued products. The other is to increase alternative items in reciprocity for the farm food. The most obvious is the labor the Pygmies provide for the farmers on various occasions. We should notice here that the two methods are apparent in the *efe-maia muto-maia* system. This works as a credit system, as well as regulating the indirect exchange of farm food and labor.

The *efe-maia muto-maia* system which forms a background for the absorption of the Efe women into the village, as we have seen in the previous section, provides at the same time the Pygmy's basic economic requirements. Perhaps the Efe women should be included among those items which are exchanged for farm food. Of course, the Efe women cannot be exchanged for anything directly. A Balese cannot marry his female *efe-maia* no matter how much he gives farm food to her family. It would be considered incestuous, when the kinship framework is applied to their relationship. His aim is, in fact, to make her available for other Balese men. He can, however, marry an Efe woman who becomes available through the symbiotic relationship with her Balese partner. Here we see a similar situation to that concerning incest taboo or the generalized marriage exchange discussed by Lévi-Strauss (1949).

The Pygmies cannot be compensated by farm food for the loss of their women directly. They receive a marital payment, but it is only temporal and usually it does not consist of food. Although it is certainly possible that their brothers-in-law give them farm food whenever they ask, the Pygmies tend to avoid doing so.⁽⁶⁾ They can, however, obtain "necessities" from their *muto-maia* throughout their life.

Thus from the viewpoint of the total community of the Balese and the Pygmies, it could be said that the Balese make the Efe women available by giving them farm food continuously. In turn the Pygmies derive much of their subsistence needs by allowing the Balese to take their women. The flow of Efe women and the opposite flow of the farm food are two interrelated sides of a single system of symbiosis. If one accepts the importance of the symbiotic system, the two way flow must be recognized. This is not the inevitable pattern of their relationship, but simply a fairly reasonable consequence, at least under the socio-ecological conditions discussed above.

If we take into consideration the flow of the labor and reproductive ability of Efe women into the Balese society, it becomes easier to understand why so often the balance of the merit of economic exchanges lies with the Pygmies. The factors involved here have intrigued researchers. For example, Putnam gives an interesting explanation of the matter:

"Before the Belgians stopped intervillage and intertribal warfare, the most important single duty of the pygmy was to act as scout and intelligence agent in the forest. As soon as he became aware of a raiding party crossing the boundary of his host's territory he would hotfoot it to the village to give warning. This eternal vigilance on the part of the pygmy was probably of more value to his hosts than the

meat that he brought in. Now that the need of this has ceased he is fulfilling only half of his contract; the negro, who still provides plantains and manufactured objects, is still fulfilling all of his. Still both are satisfied." (Putnum 1948:323)

The farmer who has a Pygmy capable of frequently killing elephants is of course happy. But many farmers usually complain that their Pygmies are *bure* (useless). It is not surprising that a Pygmy does not bring any meat for a long time for his *muto-maia*. Occasionally a Pygmy even receives some meat from his *muto-maia* if the latter is a skillful trapper as well as a generous person! (Waehle, E. personal communication)

These situations do not mean that the symbiotic relationship is an illusion but that we should widen the scope of the model to include elements other than the mere direct results of economic exchanges.

For the Balese, the the fundamental point of the *e-fe-maia muto-maia* relationship seems to be in the fact that they hold various rights and control over the Pygmies, which can potentially produce profits for the farmers. One of these rights is exercised in a direct economic manner. For example, he can at least ask for the service of his Pygmies, although he has no method to enforce the request. It depends on the degree of mutual relationship or other factors whether the Pygmies comply. Another example is social and political. A Balese can acquire social alliances with other Balese families or Efe groups through the marriage of his female *e-fe-maia* in the same way as his real sister or daughter's marriage establishes ties (Fig 4). These alliances are advantageous for the Balese not only in time

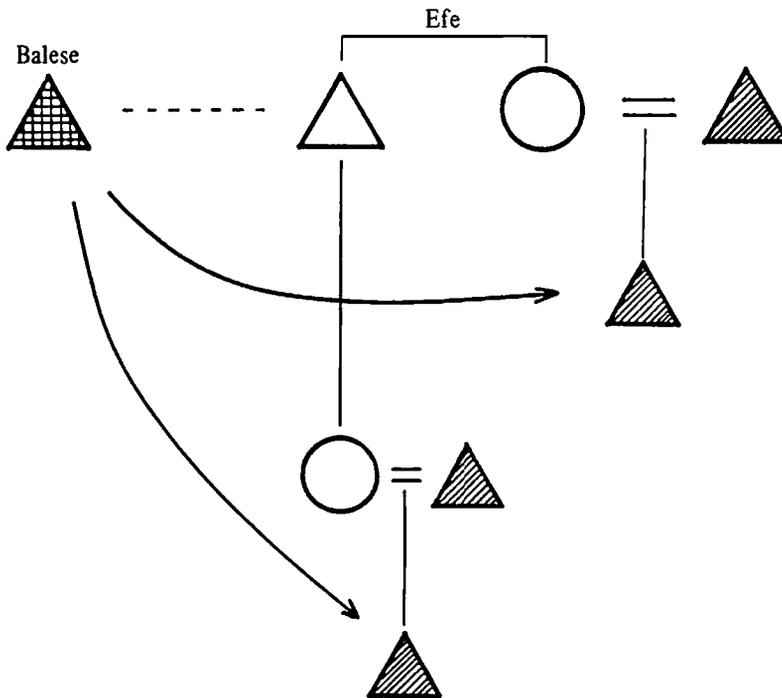


Fig.4. Social alliances between a Balese and his pygmy's affines.

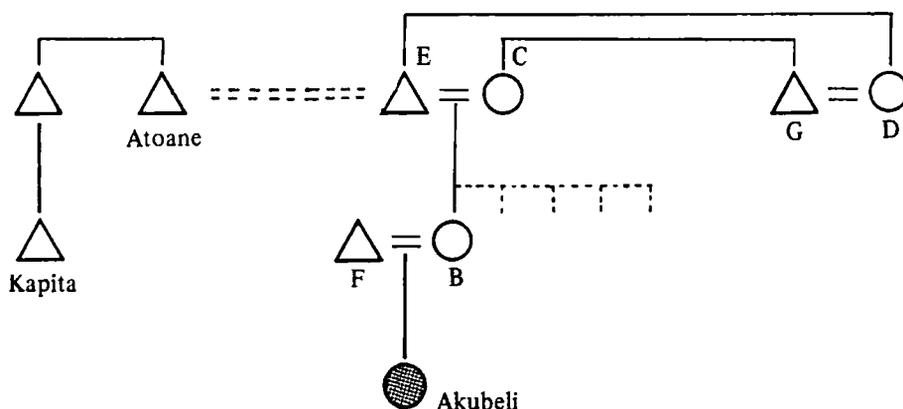


Fig.5. Transfer of a right to pygmy girls.

of war, mentioned by Putnam as well as by Schebesta both cited above, but also often in times of peace, as at present. There also seem to be many other rights and control which work in an indirect manner giving the Balese some advantages. Intermarriage is certainly one of them. In this paper, I was unable to discuss this to a great extent. Certainly further studies are needed to deepen our understanding of the socio-ecological system the farmers and the hunter-gatherers have established in the tropical rain forest.

* * *

NOTES

1) The intermarriage between the Bira, one of the main Bantu groups in the Ituri, and the Pygmies is not frequent now, although Schebesta (1936:162) mentioned a strong tendency of the intermarriage between them according to his observations. The change of the nature of symbiotic relationship seems to be partly responsible to this. From the 1950s, meat traders from outside forest markets began to come into the forest in order to get game meat from Mbuti net hunters, paying for it with farm food, clothes, cash money, etc. The farmers consequently experienced the decrease of their control over the Pygmies as well as the decrease of the gift of game meat and other services from the Pygmies. Thus the Mbuti have become more independent from the farmers (Hart 1978). As shown in the text the interdependence of the two groups is one of the factors related to the intermarriage.

2) The transfer of the right to a girl takes place by reasons other than marital payment, too. Sometimes an Efe girl living in the village has a complex background. I mention here an example.

An Efe girl, Akubeli, lived in the Andiri village in the house of Kapita. Her grandmother, (C), came from the family of (G) as compensation for the marriage of (I) and (G) (Fig. 5). The woman, (C), gave birth to many children, whereas (D) produced none. Then (G) demanded (E) for the compensation for the lack of children, and the matter was settled by Atoane who was the *mutu-maia* of (E) by paying with an axe and ten arrows. In return, Atoane acquired one of (E)'s daughter, (B), the mother of Akubeli. Some years later, (B) married a man (F) and gave birth to Akubeli, but (F) had not yet paid the bride-price, then Atoane acquired (B)'s daughter this time. As Atoane became older, he transferred the right to Akubeli to his nephew, Kapita. These were the events behind why Akubeli lived with Kapita in 1985.

3) The exchange system as well as the alliance itself between the Balese and the Efe is characterized by flexibility which contributes to maintaining the system. The Pygmies' economic ex-

change strategy also has a very flexible nature. See Terashima (1986).

4) During the honey season, the Pygmies are least dependent on farm food. A large part of the calories they need is taken from the honey. Ichikawa (1983) calculated that the net-hunters he studied took more than 1900 kcal per person from the honey during the season of 1975. Farm food was also eaten, although the quantity was little (11% of the total calories). I observed a similar situation among the Efe Pygmies in 1983 when the honey was very abundant for several months, the first time after several lean years. They enjoyed the honey very much, but at the same time, I often heard them complain about the scarcity of farm food because the village was too far away from honey collecting camp to go and obtain quickly.

5) As the explicit number of the population density of the !Kung in Dobe area is not given by Lee, I calculated it using his data.

6) This is partly because a somewhat institutionalized avoidance relationship exists between the brothers-in-law. They say that they are afraid of them. This, however, may have a deeper psychological reason. If they obtain the farm food frequently, they would have to admit that they give their women in exchange for the food, the idea perhaps disgusts them.

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