

# ‘LOGIC OF GRADATION’ AND ‘LOGIC OF SCISSION’: FOREST OWNERSHIP IN THE WAMBA REGION OF THE DEMOCRATIC REPUBLIC OF THE CONGO

Daiji Kimura

*The Center for African Area Studies, Kyoto University*

E-mail: daiji.kimura@gmail.com

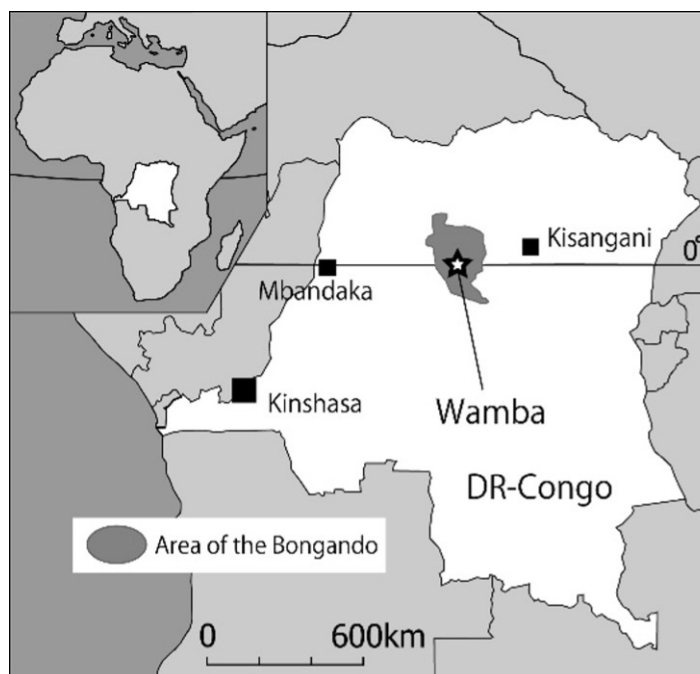
**ABSTRACT** This paper analyzes land ownership in the Wamba region of the Democratic Republic of the Congo. The Bongando people in this area have repeatedly moved from one place to another for a long time and, as a result, their sense of land ownership has gradually faded the further away they moved. They consider land ownership as extending around landmark rivers, which are in clusters that form enclaves. Moreover, their lineage structure is nested. Each lineage that owns land conflicts with others on a variety of issues, e.g., land related issues at one level; however, they are allied on other issues at higher levels. In these ways, the Bongando encompass land ownership from a sense of the ‘logic of gradation’. In recent years, however, nature conservation groups have begun defining nature reserves by parceling out the land and delineating certain areas with uniform obligations and rights. This approach, referred to as the ‘logic of scission’, has caused conflicts among the local people and between the people and the conservation groups. In the future, nature conservation activities will require measures involving a ‘logic of gradation’.

**KEYWORDS:** Bongando; Democratic Republic of the Congo; Land ownership; Logic of gradation; Logic of scission.

## INTRODUCTION

In this paper,<sup>(1)</sup> I present an analysis of the issues concerning land ownership in the Wamba<sup>(2)</sup> region (Figure 1) of Tshuapa Province, the Democratic Republic of the Congo (DRC). Since 1973, Japanese primatologists have carried out field research on the bonobo (*Pan paniscus*), a great ape species, in Wamba. Ecological anthropology studies have also been conducted on the Bongando people, shifting cultivators in the area. I began my anthropological research on the Bongando in 1986, which continues to this day (Kimura 1992).

From the colonial period through to the 1980s, several foreign companies called ‘société’ operated in this region and opened plantations. They grew coffee and rubber and also bought coffee beans that the villagers produced, which was the only source of cash income for the area. In the 1990s, however, as the security situation in the country formerly called Zaire deteriorated, these actors withdrew from Wamba. At the same time, primatological and anthropological research

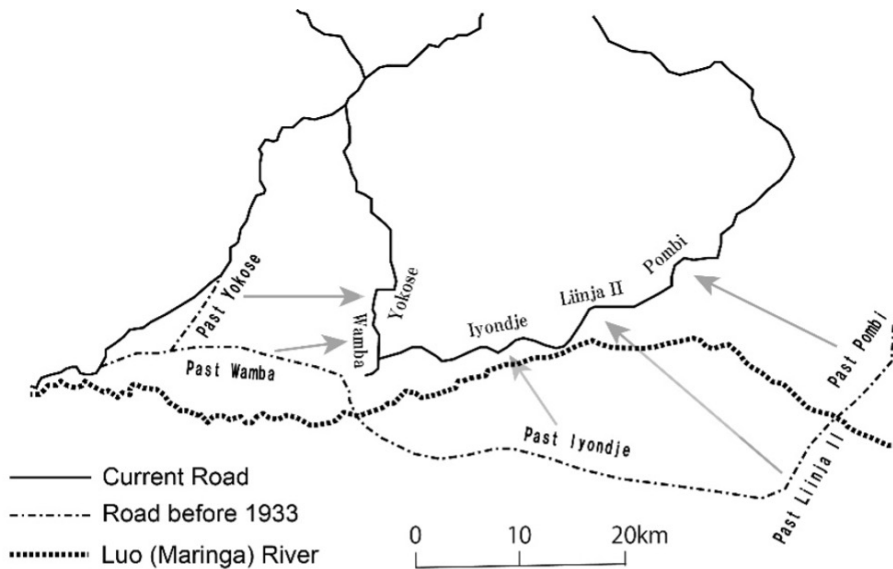


**Figure 1** Map of the study area.

became impossible to pursue from the 1990s to the early 2000s, due to the civil war that finally ended in 2003. And, research resumed. By the end of 2005, I myself was able to return to Wamba after a 16-year absence.

At that time, I observed several international-aid nature conservation programs provided to the war-torn people of the region; however, this served to instigate conflict between the nature conservationists and the local people whose rights and freedoms were being infringed upon with the introduction of these new programs. In this paper, I discuss the inconsistency between the ‘logic of gradation’ and the ‘logic of scission’ regarding land ownership. This inconsistency is the background of the aforementioned conflict. The former is a dynamic and plastic concept of ownership initially held by the local people, whereas the latter is a concept of ownership with well-defined boundaries, as represented by maps.

In this paper, I begin first with a history of the region and its kinship structure. The subsistence activities of the Bongando people are explained with respect to the ‘logic of gradation’, a dynamic that had originally existed. Next, bonobo research and conservation activities are described and analyzed from the perspective of the ‘logic of scission’. Against these backgrounds, I provide several examples of ongoing conflicts in the region over the ownership of the forests. Finally, I consider theoretically the differences between these two logics and present prospects for the future.



**Figure 2** Village movement in 1933 (modified from Kimura 1998).

## RESEARCH AREA AND PEOPLE

### I. The Bongando and their migration history

The Bongando constitute an ethnic group belonging to the Mongo cluster of the Bantu group (Murdock 1959). Their language is C63 in Guthrie's (1967–1971) classification. According to my estimate (Kimura 1992), their population was 450,000 to 500,000 in the late 1980s. Assuming a population growth rate of 3% over the following 30-year period, the population would currently have reached 1,100,000 to 1,200,000 inhabitants.

The Bongando people are now settling in the areas shown in Figure 1. However, they have migrated in the past as part of the Bantu expansion that began 3,000 years ago. According to their oral history, their ancestors crossed the Ubangi River north of Kisangani, passed near Kisangani, and then migrated westward to reach their current settlement (Kimura 1998). In the past, they formed smaller villages and lived scattered in the forests. However, after the construction of the motorway by the Belgian colonial government, they began to congregate along the road.

The most recent large-scale migration is said to have taken place around 1933 (Kimura 1998). Until then, the villages in the Wamba area were distributed along a road that ran further south than today. The road crossed the Luo River once from north to south, ran east, and then crossed the Luo River again from south to north (Figure 2). However, a Belgian administrator at that time considered that

it was inconvenient for the people, because the road crossed the river twice. He had the people build a new road north of the Luo River, and all of the villages in the Wamba region moved near the new road, where they settle now (Figure 2). This movement is closely related to the discussion in this paper.

## II. Patrilineal lineage structure

The Bongando have a patrilineal lineage system. Its hierarchical structure is stratified into several levels. Usually, members connected by patriline live in close proximity. As a consequence, the residence pattern roughly corresponds to the lineage hierarchy.

Each lineage level is as follows.

- The lowest lineage level is the extended family (*elombo*).
- Several *elombos* compose a lineage level called a *losombo* of about 10–100 persons. In a *losombo*'s residential area, a small hut (also called a *losombo*) is constructed. Men of the *losombo* frequently gather in this hut to chat; thus, it is a symbol of the integration of lineage.
- Several *losombos* compose an upper lineage level of about 50–500 persons. This level has no name in Longondo (Bongando language), but it loosely corresponds to the term 'localité,' an administrative unit in the DRC. This lineage level is the unit of exogamy.
- Several localités compose an upper lineage level of about 500–5,000 persons. This level also has no Longondo name and corresponds to the administration unit called 'groupement'. Wamba and Iyondje, which are often referred to in this paper, are the names of groupements. Usually, a traditional chief holds the administrative chief position of a groupement.
- Some groupements are integrated into four major lineages named Lalia-Buuma, Lalia-Iyondo, Lalia-Ngolou, and Lalia-Boyela. These major lineages occupy the northeastern, northwestern, central, and southern areas of the Bongando area, but regional boundaries are unclear. This level is a rough classification of the entire Bongando, but has no implications as a political union.
- These four large lineages compose the Bongando ethnic group.

These patrilineal lineages show strong solidarity and exclusivity. I provide several examples below.

I was conducting my research in the localité Yalisanga, with a population of about 150. Whenever I tried to hire someone to do notetaking, there was always a dispute over the balance of the number of people among minor lineage *losombos*. On the other hand, when the chief of the Groupement d'Iyondje, to which Yalisanga belongs, tried to include people to work from her own localité Bisandu, the people of Yalisanga united and resisted bitterly.

The bonobo research base was located in Groupement de Wamba. The people of Wamba were very reluctant to let talented people from other groupements be hired by the research team. An employee from another groupement described this situation as follows, "There is a chair (an employment post), but it is full of

thorns (due to the harassment by the villagers).”

Thus, the *losombos* within a localit  are at odds with each other regarding their mutual interests. However, they are united when it comes to issues with the outside localit . In other words, whether lineages are in conflict or allied with each other is variable, depending on the nature of the problem.<sup>(3)</sup>

### III. Subsistence activities and land ownership

#### (1) Slash-and-burn agriculture

The Bongando people live by shifting cultivation (Takeda 1990). Most of their cultivated area is occupied by cassava fields. The fields have been created within about 3 km of the villages. Coffee was also actively cultivated as a cash crop until the 1980s. However, since the 1990s, the international price of coffee has declined. Also, the transportation infrastructure of the region was damaged by the political turmoil. These challenges resulted in the decline of coffee production.

#### (2) Hunting, fishing, and gathering

Although the Bongando are classified as farmers, they also actively engage in hunting, fishing, and gathering activities (Takeda 1990). Group hunting using spears and nets was common until around the 1980s. However, the density of large animals has recently declined. Nowadays, group hunting is rarely practiced, and individual hunting with snares has become popular. Bonobos are one of several animal species that are not hunted due to food taboos (Lingomo and Kimura 2009), which is one of the main reasons why the Wamba region has become a bonobo research site. Fishing using gill nets and hooks is also popular and, recently, the focus of their protein acquisition has shifted from hunting to fishing (Kimura et al. 2012). The forest is also rich in edible plants, mushrooms, caterpillars, etc., which are collected mainly by women.

In the vicinity of villages, hunting is conducted within an area of approximately 2 km, and fishing is conducted within an area of approximately 5 km (Kimura et al. 2015). On the other hand, the Bongando set up camps in primary forests a few to several dozen kilometers away from the villages. They often stay in the camps for prolonged periods for hunting and fishing. Thus, their activities in the forest have spread from the center of the main village, with several satellite-like spreads intruding deep into the forest.

## BONOBO RESEARCH AND THE ACTORS IN NATURE CONSERVATION

### I. History of bonobo research in the Wamba region

In the 1970s, bonobos were the last great apes to be studied in the field. The main reason is that they are distributed only in the deep tropical rainforests on the right bank of the Congo River. In 1973, Dr. Takayoshi Kano began the world’s first long-term survey of bonobos in Wamba (Kano 1992). Since then, many primatologists have conducted research in Wamba.



**Figure 3** Three nature reserves near Wamba.

In 1992, the study area around Wamba was designated the Luo Scientific Reserve (Figure 3) by the initiative of Japanese researchers. In the reserve area, hunting using guns, traps with metallic wire, and poisoned arrows was prohibited. Also, it was forbidden to clear primary forests and extend agricultural fields. On the other hand, hunting using traditional methods, clearing secondary forests, and gathering plants in the forest were not subject to regulation. Shortly after the establishment of this nature reserve, however, the deteriorating domestic situation in former Zaire and the following two Congo Wars made it impossible to continue the research. During this period, bonobos were hunted, mainly due to foreign soldiers' influence, and the Wamba region's bonobo population declined (Idani et al. 2008). In the 2000s, when the situation stabilized, bonobo research resumed. Local people, international non-governmental organizations (NGOs), and the DRC's national institutions began to develop various forms of conservation activities, which I will describe in the next section.

## II. Actors in Nature Conservation

### (1) Wamba Committee for Bonobo Research (WCBR) and Centre de Recherche en Ecologie et Foresterie (CREF)

The official name of the Japanese Wamba research team is the ‘Wamba Committee for Bonobo Research (WCBR)’. The WCBR research base is located in localité Yaenge village in Groupement de Wamba. The Centre de Recherche en Ecologie et Foresterie (CREF), a national research institute in the DRC, works together with the WCBR with regard to research and conservation activities. The CREF has its headquarters in Mabali, on the shores of Lake Tumba, south of Mbandaka; Wamba is also an important research center. The CREF has managed the Luo Scientific Reserve with the cooperation of the WCBR.

### (2) Forêt des Bonobos and African Wildlife Foundation (AWF)

The Forêt des Bonobos is a local NGO founded in 1991 by Mr. Lingomo Bongoli, born in the localité Yohala in Groupement d’Iyondje, east of Wamba.<sup>(4)</sup> Its objective was to protect bonobos and their forests. Since its establishment, this group has been conducting activities such as holding meetings to appeal for wildlife conservation.

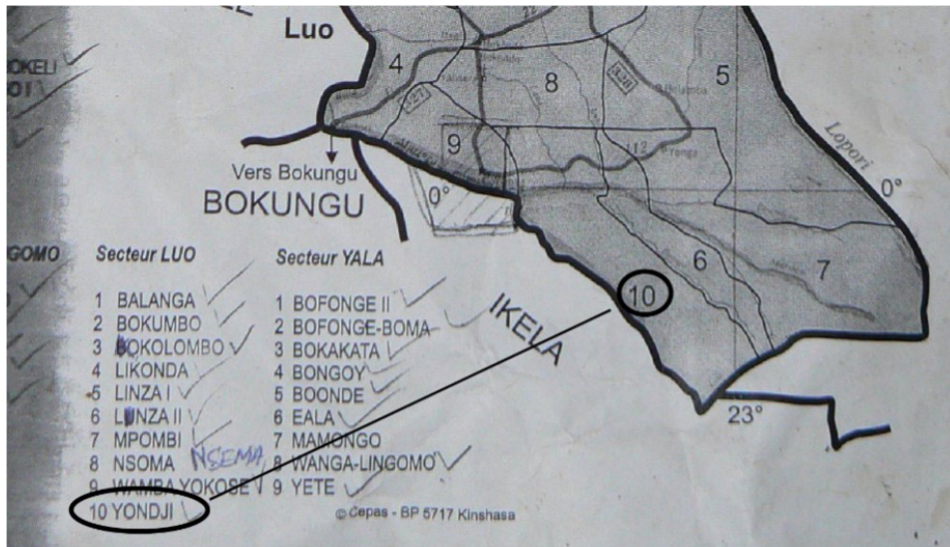
In 2007, the African Wildlife Foundation (AWF), an international wildlife conservation NGO, launched a campaign to protect the Iyondje Forest.<sup>(5)</sup> With AWF’s support, the activities of the Forêt des Bonobos became more energized.<sup>(6)</sup> Conservation activities began with forest monitoring and, in 2010, bonobo habituation was initiated in the Iyondje forest. The WCBR has cooperated with these activities in various ways. In 2012, a part of the Iyondje Forest was designated as the nationally recognized Iyondji Community Bonobo Reserve<sup>(7)</sup> (Figure 3) (Sakamaki et al. 2012). The reserve creation has, however, led to conflicts with the people of the Groupement d’Ilongo over the use of the forest. This will be discussed later.

### (3) Bonobo Conservation Initiative (BCI)

The Bonobo Conservation Initiative (BCI) is an international NGO led by Ms. Sally Cox, an American environmentalist. She first visited the Wamba area in 1994, and in the 2000s, she began bonobo conservation activities. BCI has many donors and is very active in the field. The center of its activities is the Kokolopori<sup>(8)</sup> area to the east of Iyondje (Figure 3); the Kokolopori Bonobo Reserve<sup>(9)</sup> (Figure 3) has been established there. The BCI is working with local magnate, Mr. Albert Lotana Lokasola, on conservation efforts. Since 2002, Mr. Lokasola has hosted a local NGO, Vie Sauvage.<sup>(10)</sup>

### (4) Institut Congolais pour la Conservation de la Nature (ICCN)

Institut Congolais pour la Conservation de la Nature (ICCN)<sup>(11)</sup> is the national agency responsible for the administration of nature conservation in the DRC. Including its predecessors, this institution has existed since the colonial period. The Wamba region has three nature reserves, as described above: the Luo Scientific Reserve, the Iyondji Community Bonobo Reserve, and the Kokolopori Bonobo



**Figure 4** Official map showing the Iyondje territory. The correspondence between YONDJI (indicating Iyondje) and area No. 10 on the map was added by Kimura.

Reserve. Of these, the ICCN has had the Iyondje Community Bonobo Reserve under its management since 2004. ICCN's eco-guards patrol the reserve with guns to control poaching.<sup>(12)</sup> As a result, some villagers have expressed antipathy towards it. Eco-guards consist mainly of people from the outside, but some local villagers are also employed.

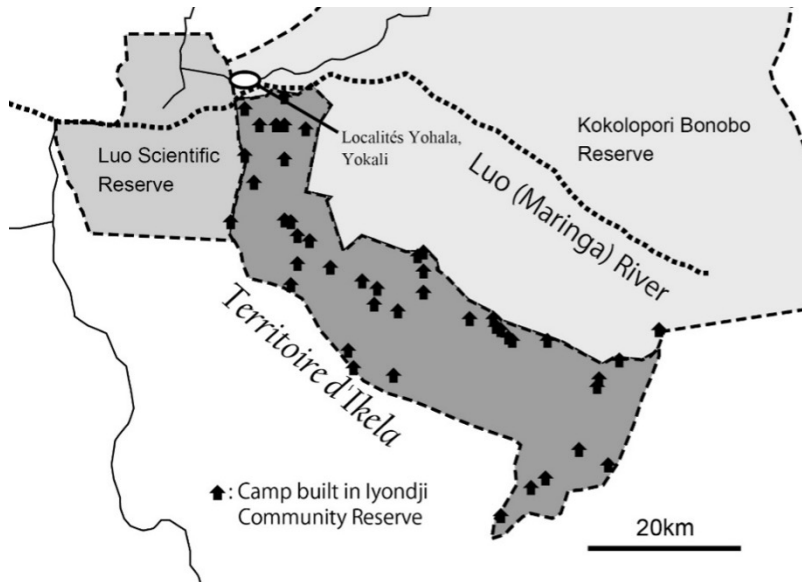
## CONFLICTS OVER NATURE RESERVES

### I. Historical land ownership and daily use

The first issue is the ongoing problem in the southern part of the Iyondje Community Bonobo Reserve. As shown in Figure 3, the area of the Iyondje Reserve stretches widely in a southeast direction from the settlement village. This is not because bonobos are abundant in this area, but because the territory of the Groupement d'Iyondje extends in this way. The official map<sup>(13)</sup> (Figure 4) also shows this extension.

Why did such an extension happen? As mentioned above, the Bongando people migrated through the forest in the past. The last migration was from south of the Luo River in 1933. Until about 90 years ago, the Iyondje people lived south of the Luo River, where Iyondje territory now extends. This is the source of their sense of ownership of the area. In addition, the people of Yohala and Yokali used to build hunting and fishing camps in the southeast forest, as they know the area





**Figure 5** Camps built in the Iyondje Reserve (based on a document of the African Wildlife Foundation, 2010)

well. Based on such background, the Iyondji Community Bonobo Reserve was set up in a form extending to the southeast.

Recently, the people of Iyondje have stopped visiting the far southeastern edge of the region. Instead, people of the Territoire d'Ikela in the south, (Figures 3 and 4), which is closer to this area, have established many hunting and fishing camps there (Figure 5). For the Ikela people, it was natural to build camps in the forest close to their villages. They seemed to have little awareness that this was administratively Iyondje territory.

No practical problem has arisen until recently, when the line of the nature reserve was drawn. However, once a reserve was established, the activities of the Ikela people, such as building camps and hunting, were prohibited. Even so, people who build camps for their livelihood cannot be evicted quickly, and forcible evictions could lead to violence. I asked members of the Forêt des Bonobos, AWF, and ICCN about how they planned to deal with the situation. They generally responded, “We have to persistently and repeatedly persuade the Ikela people.”

## II. Gradational consciousness of land ownership

As such complex ownership of the forest became apparent, I asked the Iyondje people about how they perceived land ownership in the southeastern forest. It became clear that their perception of land ownership differed considerably from that of the official map. Using the map, we usually draw boundaries and uniformly

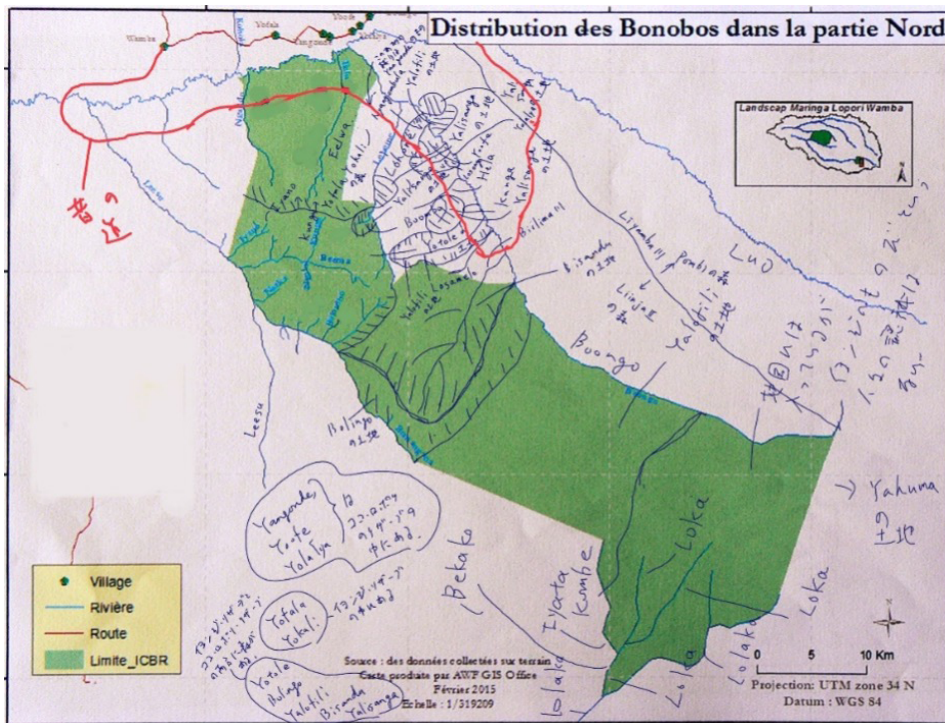


Figure 6 Forest ownership by each localité in Iyondje.

paint the territory. In contrast, the Bongando people would say, for example, that “Hela is our land,” but ‘Hela’ is the name of a stream that runs through the forest. In the Congo Basin, tributaries of the Congo River spread out like veins, and each tributary has been named by the local people. These streams are the most prominent landmarks in tropical forests, where the high canopy makes visibility difficult. When they say, “Hela is our land,” they are referring to the area ‘around the Hela Stream’, where there are no clear boundaries. The sense of ownership gradually fades away from the Hela Stream.

Also, if I asked some people of a localité, “Where is your localité’s forest?” I may hear several names, for example, “A, B, and C”, specifically, the names of rivers. In this way, they did not refer to a single place. Instead, they referred to the perimeter of each river that made up the enclave apart from each other. I once talked with Mr. Lokasola, head of the Vie Sauvage, about the boundaries of the nature reserve. He exclaimed, “Their (villagers’) forests form enclaves!” Even locally born, Mr. Lokasola must have come to believe that the perception of a ‘painted map’ is standard over the course of his education. Figure 6 is a map I drew based on interviews regarding land ownership in each localité of Iyondje. Their ownership perspective is a complex construct, similar to bubbles or clusters of grapes.

### III. Subsistence activities in the forest and delineation of the nature reserve

Problems have arisen not only with regard to relationships with the Ikela but also among the Iyondje people themselves. Some villagers felt that their forests had been taken away by the establishment of the nature reserve. Of course, villagers agreed to the establishment of the reserve after being briefed on the regulations.<sup>(14)</sup> In addition, zoning has been implemented in the area. So it would seem that there should not be too great a burden on the local people’s lives.

The antipathy of the local people is partly due to ICCN eco-guards patrolling the forest with guns. Even if eco-guards are doing their job well, their mere presence is intimidating. This may reinforce feelings that the forest has been taken.

However, apart from such concrete intimidation, there seems to be an underlying discomfort with ‘scission’ itself. Even if zoning is applied, establishing a nature reserve is ultimately a matter of drawing a line in the forest. It stipulates, “From here on, you are not allowed to do XX”. However, in reality, no lines have been drawn in the forest. Unlike the savanna, where visibility is good, it is difficult to define the boundaries of a deep tropical forest. The boundaries are not known, but they are defined legally. If the villagers unknowingly cross that boundary and catch an animal, they may be arrested. Such skepticism and fear may reinforce the local people’s sense that their forest is no longer theirs.

### IV. Actors of nature conservation and lineage structure

As seen in Figure 3, three nature reserves have been established next to each other in the Wamba region: the Luo Scientific Reserve, the Iyondji Community Bonobo Reserve, and the Kokolopori Bonobo Reserve. Comparing the charter of each area, they are similar to each other. One might wonder why they are not working together. In reality, however, each nature reserve’s history and founding organization are different, so it is actually difficult to merge them.

Of these, the Luo Scientific Reserve was established first, and there was an idea to establish the Iyondje Reserve as an extension of the Luo Reserve. However, Japanese researchers alone could not shoulder the burden of the financial and human resources required. The Iyondje Reserve was eventually established with the help of the AWF, with the cooperation of a Japanese team. On the other hand, there was considerable friction between the Iyondji Community Bonobo Reserve and the Kokolopori Reserve over how to delineate their boundaries. In fact, at one point in time, there was some overlap between the two reserves. However, subsequent discussions have finalized the boundaries, as shown in Figure 3.

This friction among the nature reserves corresponds to the lineage structure of the local people. There are ten localités within Groupement d’Iyondje, and the two localités, Yohala and Yokali, located in the westernmost part, are the foundation for establishing the Iyondji Community Bonobo Reserve. The BCI negotiated with the chiefs of eight other localités and incorporated them into the Kokolopori Reserve. The reason for this breach in Groupement d’Iyondje is that Yohala and Yokali are separated from the other eight localités by lineage structure. Actually,

there was a time when Yohala and Yokali formed an independent groupement.

Thus, the Yohala-Yokali and the other eight localités are divided and opposed to each other over the nature reserves. However, they are united regarding their interests against other groupements, such as Wamba. The establishment of nature reserves may permanently change this form of flexible lineage relationships into fixed ones.

## DISCUSSION: 'LOGIC OF GRADATION' AND 'LOGIC OF SCISSION'

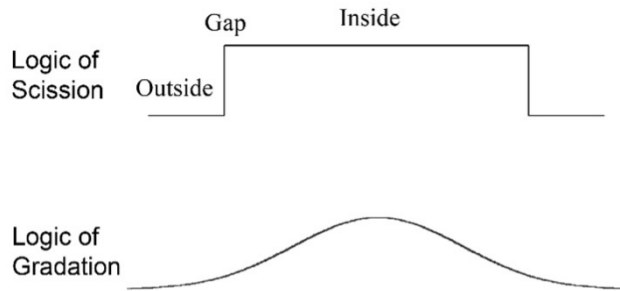
As described so far, various conflicts over forest ownership have arisen in the Wamba region. When I first entered the area in the 1980s, there was very little of this kind of turmoil. The establishment of the reserves may have been the catalyst for such conflicts. It is necessary to think about why the reserves caused such a situation.

### I. Introduced 'logic of scission'

First, I will discuss the issue of the southeastern part of the Iyondje Reserve, involving the rights of the Iyondje people who originally lived there and administratively own it, and the rights of the Ikela people who routinely use the forest for hunting and fishing camps. Before the reserve was established, the Iyondje people had only a loose sense of ownership of the forest. This sense was not enough to drive away the people of Ikela. The Bongando people have a long history of migration. For them, moving their place of residence is more natural than staying in one place forever. In an era of such migration, what constitutes a sense of ownership of the land? There must have been memories of living in that area in the near past. However, such memories gradually fade as the people move from the area and eventually disappear. Thus, their sense of land ownership is shaded like the tail of a comet as they move. In addition, their ownership of the forests is not clearly delineated as in the drawing of a map. Instead, it is understood as an enclave centered on each river, like bubbles or clusters of grapes (Figure 6).

However, the colonial government drew administrative boundaries without considering the local people's various 'shades of ownership'. As a result, the land belonging to Iyondje became a distorted extension to the southeast. Even so, before the establishment of the nature reserve, this was merely a matter of paperwork. The situation became severe when nature reserves were established along the administrative zones. Hunting was homogeneously prohibited inside the reserve. As a consequence, it was decided that "the camps of the encroaching Ikela people should be withdrawn".

A similar discrepancy is seen in the conflict between the local people and the nature reserve. The villagers of Iyondje are not opposed to the establishment of the nature reserve itself; however, they are opposed to the 'ideological' lines drawn for the reserve boundaries. The people are punished if they cross even one step beyond the lines and catch an animal. Such a situation is so repressive that



**Figure 7** Schematic diagram of ‘logic of gradation’ and ‘logic of scission’.

their sense of being ‘deprived of the forest’ has intensified. In the past, even without a reserve, the forests in the southeastern part of Iyondje were loosely protected, because they were far from human habitation.

Furthermore, the friction between conservation actors can also be described as a conflict ‘on the map’. It is difficult to know precise positions when walking through a tropical forest. The sense of ownership of the land is naturally ambiguous. However, in recent years, global positioning system (GPS) devices have made it possible to match actual locations with maps. This has led to a situation where ‘cartographic’ conflicts correspond to reality. Conflicts between lineages have also traditionally been latent in everyday life. Congruence and confrontation are determined relatively, depending on the level of conflict. The establishment of nature reserves created the possibility of fixing this division in the future, in the form of “this lineage belongs to this nature reserve”.

Thus, a situation that had worked well under traditional ownership began to become problematic when lines were drawn on a map. In drawing lines, there is a certain sense of ‘violence’. This has often been discussed in the history of Africa: the division of colonies by European powers and the drawing of borders,<sup>(15)</sup> in which the form of representation known as ‘maps’ play a significant role. In a map, the complicated rights, ownership, and social relations that can only be expressed in shades of reality are ignored, and definite boundary lines are drawn.

## II. How to Avoid Creating ‘Steps’?

I will attempt a more theorized explanation of the previous discussion. In Figure 7<sup>(16)</sup>, the vertical axis represents certain social rights, and the horizontal axis represents social or spatial extent. In the ‘logic of gradation’ (below), the land rights vary gradually. For example, near Iyondje village, the sense of ownership of the forest is strong, but as one moves south, it gradually diminishes. In the ‘logic of scission’ (above), on the other hand, the change appears as a vertical gap. As soon as people step beyond the boundary, hunting is prohibited, and

when they stay within, hunting is possible. This radical change causes the ‘violence’ that I mentioned.

I once gave a presentation on the difference between ‘equality’ and ‘egality’ among hunter–gatherers at the International Conference on Hunting and Gathering Societies (CHAGS) (Kimura 2017). One main point of my presentation was that equality inevitably results in inequality. To maintain a ‘flat surface’ of equality, the ‘rim of a tank’ should be created (Figure 7 above). There will inevitably be a gap, or inequality, between the inside and outside. For example, the Constitution of Japan states that, “All Japanese people are equal under the law.” However, this creates a clear gap between ‘Japanese people’ and ‘foreigners’. Thus, it is practically impossible to say that “everyone is equal” without any limitations. To prevent the creation of a gap, rights must change gradually.

In the Baka hunter–gatherer society in Cameroon, for example, when they distribute the meat, they probably do not think of “sharing it equally among the whole camp” (Kimura 2017). There is only a dyadic relationship, such as, “I have, you do not have, so I will give to you.” It is a ‘local’ event between the person at hand and oneself. Through the repetition of such a dyadic distribution, the meat goes to the whole camp. Such an ‘I’ and ‘you’ relationship is what I call ‘egality’.

Both the logic of equality and the logic of gradation can be captured in the image below in Figure 7. What is important is that one “does not see the whole”. The desire to see the whole from above and to govern all homogeneously creates violence. However, it is difficult to ‘dare’ one not to see the whole but only the parts. It is a kind of ‘technique’ that the Pygmies have mastered; the Bongondo people’s notion of land ownership has/had also worked well by intentionally leaving in ambiguity.

The contrast between these two logics is important, not only from the perspective of ownership of land or goods but also in terms of land use. In recent years, notions of ‘land sparing’ and ‘land sharing’ have been discussed (Fischer et al. 2014; Kremen 2015). The former is land use that divides the forest into a site for human production and a protected area, and the latter is a method of creating an environment in which humans and living organisms can coexist in the same place.<sup>(17)</sup> The latter idea of not clearly cutting off the area is based on the logic of gradation.

Finally, I discuss how conservation activities in this area should be promoted. Of course, there is no option to stop nature conservation. It pains me to see the deep forests being cleared, and I want the bonobos and other animals to survive. Rather than proceeding with activities based on the ‘logic of scission’, is it possible to insert a ‘logic of gradation’ into conservation activities? Zoning is one practical way. However, common zoning often ignores the actual activities of the local people. For example, in Southeast Cameroon, many areas where Baka pygmies have engaged in sustainable hunting activities have been zoned as no-hunting areas (Yasuoka 2006). On the other hand, there is a method called ‘participatory mapping’, whereby local people are asked to bring a GPS device to their daily activities to measure their actual land use. These data can then be used for zoning purposes.

From the perspective of modern logic, approaches based on the ‘logic of gradation’ seem irrational and inefficient. However, for African people such as the Bongando and the Baka, this premise defines their operating logic. We have much to learn from this attitude. It is difficult to overturn the ‘logic of scission’, which we are already well accustomed to; however, what we can do now is to recognize the significance of the ‘logic of gradation’ and continue to try to make use of this logic. This is how to neutralize the violence of equality and scission that modern society is generating.

**ACKNOWLEDGEMENTS** This study was sponsored by JSPS KAKENHI (JP18201046, JP22241057, JP16H02716, and JP18K18249). The Ministère de la Recherche Scientifique et Technologie of the Democratic Republic of the Congo issued my research permit, and The Centre de Recherche en Ecologie et Foresterie supported my survey in many ways. In Wamba and in the Iyondje Groupement, my research was helped by Dr. Takeshi Furuichi and other collaborators. People in these groupements, especially Mr. Nsimba Lokemba (Jean-Marie) and his family in Yalisanga village, and Mr. Lingomo Bongoli in Yohala village, supported me from the beginning of my research in the 1980s. To these individuals, I make grateful acknowledgment.

#### NOTES

- (1) This paper was initially published in Japanese (Kimura 2016) and was translated into English with minor revisions.
- (2) Groupement de Wamba administratively belongs to the Secteur de Luo, Territoire de Djolu, Province de la Tshuapa.
- (3) These situations are similar to the ‘segmentary lineage system’ that Evans-Pritchard (1940) discussed concerning the social structure of the Nuer people.
- (4) Mr. Lingomo has been my most crucial research collaborator since the beginning of my research in 1986.
- (5) Activities of the AWF in the DRC are part of the Congo Basin Forest Partnership (CBFP), a tropical forest conservation initiative launched in 2002. CBFP collaborates with central African countries, major donors, and international NGOs. <https://www.awf.org/wildlife-conservation/bonobo>
- (6) However, only two localités, Yohala (Mr. Lingomo’s home village) and Yokali, are participating in this activity, rather than Groupement Iyondje as a whole. This sowed division among the localités as a consequence.
- (7) ‘Iyondje’ is sometimes spelled as ‘Iyondji’.
- (8) The exact spelling in the local language is ‘nkókó’a Lopori’, meaning ‘the area upstream of the Lopori River’.
- (9) <https://www.bonobo.org/programs/kokolopori-bonobo-reserve>
- (10) <https://www.equatorinitiative.org/2020/06/04/vie-sauvage/>
- (11) <https://www.iccnrdc.org/>
- (12) <https://www.facebook.com/iyondjicommunitybonoboreserve/>
- (13) This map was created by the Center d’Etudes Pour l’Action Sociale in Kinshasa. The date of creation is unknown.
- (14) However, there were cases in which the village chief’s signature alone was considered to represent all villagers’ consent.

- (15) A well-known example is the land division of the Maasai people into Kenya and Tanzania.
- (16) This figure was inspired by the diagram shown by Suzuki (2003).
- (17) A good example is Shikata (2016). She discusses the agricultural activities of the Bangandu, farmers in the tropical forest of Cameroon, contrasting 'land sparing' and 'land sharing'. Agricultural activities in Bangandu centered on plantain cultivation follow the latter method.

## REFERENCES

- Evans-Pritchard EE (1940) *The Nuer: A Description of the Modes of Livelihood and Political Institutions of a Nilotic People*. Clarendon Press, Oxford.
- Fischer J, Abson DJ, Butsic V, Chappell MJ, Ekroos J, Hanspach J, Kuemmerle T, Smith HG & von Wehrden H (2014) Land sparing versus land sharing: Moving forward. *Conservation Letters* 7(3): 149–157.
- Guthrie M (1967–1971) *Comparative Bantu: An Introduction to the Comparative Linguistics and Prehistory of the Bantu Languages*. Gregg International Publishers Ltd., England.
- Idani G, Mwanza N, Ihobe H, Hashimoto C, Tashiro Y & Furuichi T (2008) Changes in the status of bonobos, their habitat, and the situation of humans at Wamba in the Luo Scientific Reserve, Democratic Republic of Congo. In (Furuichi T & Thompson J, eds) *The Bonobos: Behavior, Ecology, and Conservation*, pp. 291–302. Springer, New York.
- Kano T (1992) *The Last Ape: Pygmy Chimpanzee Behavior and Ecology*. Stanford University Press, Stanford.
- Kimura D (1992) Daily activities and social association of the Bongando in central Zaire. *African Study Monographs* 13(1): 1–33.
- Kimura D (1998) Land use in shifting cultivation: The case of the Bongando (Ngandu) in central Zaire. *African Study Monographs Supplementary Issue* 25: 179–203.
- Kimura D (2016) 'Logic of gradation' and 'logic of scission': Forest ownership in Wamba region of the Democratic Republic of Congo. In (Matsuda M & Hirano-Nomoto M, eds) *African Potential 4: Cultures that Cure Conflict: Practice of Imperfection and Bricolage*. pp. 199–230. Kyoto University Press, Kyoto. (In Japanese)
- Kimura D (2017) On equality and egalitarianism. *Newsletter of the Society for Ecological Anthropology* 23: 14–16. (in Japanese)
- Kimura D, Lingomo-Bongoli, Masuda H & Yamaguchi R (2015) Change in land use among the Bongando in the Democratic Republic of the Congo. *African Study Monographs Supplementary Issue* 51: 5–35.
- Kimura D, Yasuoka H & Furuichi T (2012) Diachronic change of protein acquisition among the Bongando in the Democratic Republic of the Congo. *African Study Monographs Supplementary Issue* 43: 161–178.
- Kremen C (2015) Reframing the land-sparing/land-sharing debate for biodiversity conservation. *Annals of the New York Academy of Sciences* 1355: 52–76.
- Lingomo-Bongoli & Kimura D (2009) Taboo of eating bonobo among the Bongando people in the Wamba region, Democratic Republic of Congo. *African Study Monographs* 30(4): 209–225.
- Murdock GP (1959) *Africa: Its People and their Culture History*. McGraw-Hill, New York, Toronto, London.
- Sakamaki T, Kasalevo P, Bokamba MB & Lingomo-Bongoli (2012) Iyondji Community Bonobo Reserve: A recently established reserve in the Democratic Republic of Congo. *Pan Africa News* 19(2): 16–19.



- Shikata K (2016) Potential to create diversity: Agricultural practices based on slash-and-burn in the tropical rainforests of southeastern Cameroon. In (Shigeta M & Itani J, eds) *African Potential 4: Livelihood Practices to Avoid Conflict: Relationship of Ecological Resources and People*, pp. 267–299. Kyoto University Press, Kyoto. (In Japanese)
- Suzuki K (2013) *The Smooth Society and Its Enemies*. Keiso-shobo, Tokyo. (In Japanese)
- Takeda J (1990) The dietary repertory of the Ngandu people of the tropical rain forest: An ecological anthropological study of the subsistence activities and food procurement technology of a slash-and-burn agriculturist in the Zaire Basin. *African Study Monographs Supplementary Issue 11*: 1–75.
- Yasuoka H (2006) The sustainability of duiker (*Cephalophus* spp.) hunting for the Baka hunter-gatherers in southeastern Cameroon. *African Study Monographs Supplementary Issue 33*: 95–120.