

## BETWEEN THE GORILLA AND THE CHIMPANZEE: A HISTORY OF DEBATE CONCERNING THE EXISTENCE OF THE *KOOLOO-KAMBA* OR GORILLA-LIKE CHIMPANZEE

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**ABSTRACT.**—The taxonomic scheme proposed in 1934 by Ernst Schwarz for the subspecific classification of common chimpanzees (*Pan troglodytes*) has been accepted by the majority of subsequent primatologists. A notable exception to this general trend is that the late W. C. O. Hill continued and revived a long history of controversial debate over the existence of a rare gorilla-like chimpanzee subspecies known as the "kooloo-kamba." The history of the enigmatic kooloo-kamba is reviewed here, from its early discovery and description by DuChaillu, through the morphological investigations of Keith, Schwarz, Merfield, and others, and finally to the more recent claims of Hill. Almost all claims supporting the existence of the kooloo-kamba have invoked indigenous labels and folk taxonomies as evidence. The prolonged debate provides insights into the relationships between folk taxonomies and our own classifications. Confusion, variation, and the use of intermediate or hybrid categories in both Western and indigenous classifications probably reflects a salient biologic fact—gorillas and chimpanzees are very closely related animals with patterns of morphological development which coincide and overlap.

### INTRODUCTION

During the late 1800s and early 1900s, a large number of chimpanzee and gorilla species were described by various workers, often on the basis of a particular variation of facial coloring, hair distribution, or cranial shape. In his classic 1913 monograph on the primates, D. G. Elliot listed two genera, two species, and an uncertain number of subspecies of gorillas; he tentatively divided the chimpanzees into eleven different species and an unknown number of subspecies. Paul Matschie recognized eight species of gorillas, and added nine chimpanzee species to Elliot's list (Wendt 1959). Rothschild (1904, 1906), Matschie (1904, 1919), and others created or discussed scores of potential species and varieties of chimpanzees and gorillas during this period. Stiles and Orleman (1927), Allen (1925), and Allen (1939) provide useful summaries and synonyms for this taxonomic chaos.

In their review of the great apes, Yerkes and Yerkes (1929) could add little to Elliot's (1913) summary. As Coolidge (1929) had done for the gorillas, however, Ernst Schwarz (1934) tackled the classificatory confusion within the genus *Pan*, ultimately dividing the genus into one species and four geographical subspecies. Except that many now view the bonobo or pygmy chimpanzee (*Pan paniscus*) from south of the Zaire River as a distinct species, most subsequent authorities have accepted the Schwarz taxonomy. A notable exception in this regard is that W. C. O. Hill (1967, 1969a) followed a series of earlier investigators in claiming that two kinds of chimpanzees exist in the area of equatorial Guinea and Gabon (Fig. 1), one of these being a "gorilla-like" chimpanzee form, usually referred to as the "kooloo-kamba," its name being an onomatopoeic derivative of its supposedly distinct call.

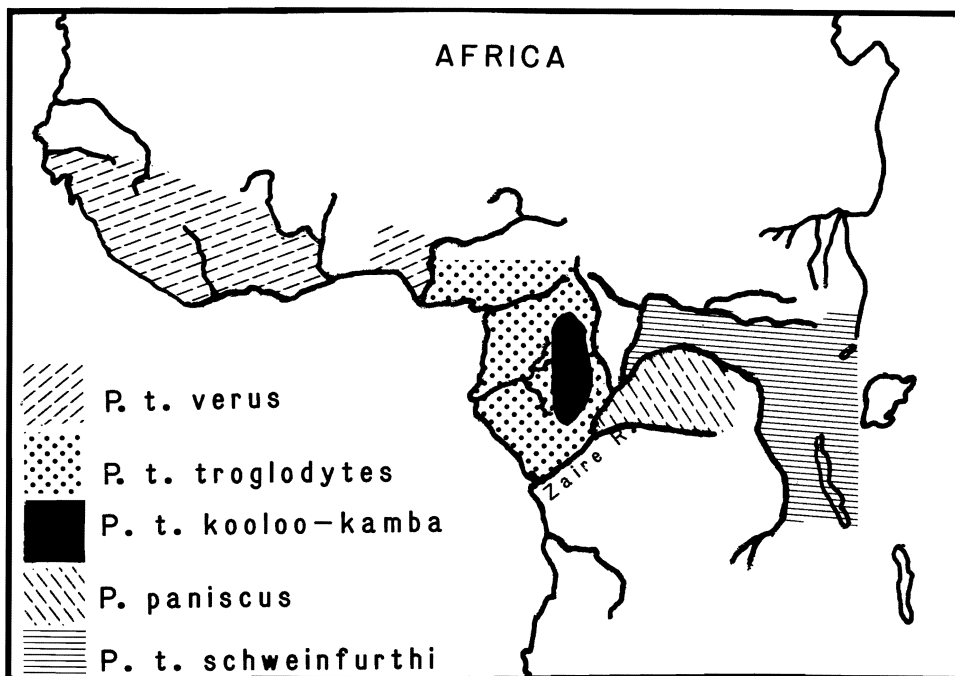


FIG. 1—(after Hill 1969a). The geographical locations of the four subspecies of *Pan troglodytes* recognized by Hill. The pygmy chimpanzee (*Pan paniscus*) is a distinct species found south of the Zaire River.

In this paper, I present a brief account of the century-long debate over the existence of the kooloo-kamba and other forms claimed to be intermediates or hybrids between the gorilla and chimpanzee, giving particular attention to the role of indigenous labels and folk taxonomies in this discussion.

#### BACKGROUND AND EARLY HISTORY

The kooloo-kamba was "discovered" and first described by the explorer Paul DuChaillu after his forays into equatorial Africa in the 1850s. His account of the discovery of this creature can be found in his well-known and controversial book entitled *Adventures in the Great Forest of Equatorial Africa* (1890), which is a revised edition of an earlier book. DuChaillu (1890, p. 290) wrote:

We had hardly got clear of the bashikouays [ants] when my ears were saluted by the singular cry of the ape I was after. 'Koola-kooloo, koola-kooloo,' it said several times. Gambe and I raised our eyes, and saw, high up in a tree-branch, a large ape. We both fired at once, and the next moment the poor beast fell with a heavy crash to the ground. I rushed up, anxious to see if, indeed, I had a new animal. I saw in a moment that it was neither a *nsbiego-mbouvé* [another of DuChaillu's apes], nor a chimpanzee, nor a gorilla.

DuChaillu's (1860) description of the morphology of this "chimpanzee-like animal" included a round head and face with high, well-developed cheekbones, jaws which were less prominent than in any of the other apes, large ears, and a bare, black face. The most distinctive feature of the ape supposedly was its cry, resembling the sound "kooloo."

DuChaillu (1860) reported that some Africans referred to this creature as the kooloo-kamba, loosely meaning "that which speaks kooloo." The only information which he could obtain about the habits of the animal was that it lived in the mountainous interior and was shy and rarely encountered. The skull of DuChaillu's animal is housed in the collections of the British Museum of Natural History, and it is pictured in Figure 2.



FIG. 2—(from Short 1980). Lateral and frontal views of the skulls of DuChaillu's kooloo-kamba, left (BMNH No. 1861.7.29.10) and a specimen of *Pan troglodytes troglodytes*, right (BMNH No. 1864.12.1.7). With permission of R. V. Short and Journals of Reproduction and Fertility, Colchester, UK.

Earlier references had been made to the possibility of two chimpanzee forms in this area of western Africa, one of which was claimed to be intermediate between known chimpanzees and gorillas. The earliest reliable reference to chimpanzees and gorillas is the account of Batell (ca. 1600, Huxley 1863) describing the large *Pongo* and the small *Encego*. An account by a British merchant given in Lord Monboddo's (1773) *Origin and Progress of Language* has been noted by Reade (1864), however, and it is interesting in that it mentions three species or types of manlike apes in western Africa: the gorilla (or *impungu*), the chimpanzee (or *chimpenza*), and a third ape intermediate between these (the *itsena*). Franquet (1852) also claimed that two distinct chimpanzee species inhabited the coast of western Africa in the area of Gabon. He called these species the chimpanzee and the *N'tchego*, the former having a brown face and large ears, the latter with a black face and small ears, as in the gorilla. Duvernoy (1855) examined a skeleton of Franquet's (1852) *N'tchego*, and he concurred with Franquet's (1852) conclusion that it was a distinct species. Geoffroy Saint-Hilaire (1857) stressed caution, however, and suggested the possibility that the morphological distinctions being used for the species

separation were only differences of sex or age. DuChaillu (1860) claimed that Franquet's (1852) *N'tchego* was in fact an adult chimpanzee, noting (correctly) that facial color in chimpanzees seems to darken with increasing age. Thus, DuChaillu's opinion was that Franquet's *N'tchego* was not the same as his own kooloo-kamba. This early confusion and lack of agreement characterizes the entire century-long discussion of the kooloo-kamba and other gorilla-like chimpanzees.

Although DuChaillu never suggested that his kooloo-kamba was the product of chimpanzee-gorilla hybridization, others forwarded this hypothesis in an effort to account for the reports of supposedly intermediate forms. German game hunter H. von Koppenfels (1881, 1887) claimed he had observed gorillas and chimpanzees interacting in their native habitat, and suggested that male gorillas and female chimpanzees unquestionably interbred. Meyer (1881) discussed actual specimens purported to be hybrids, but concluded that they were merely chimpanzees, however. One expert on the apes, Robert Hartmann (1885), was undecided concerning the issue of hybridization, and suggested that DuChaillu's kooloo-kamba and Duvernoy's (1855) *N'tchego* be considered subspecies or species intermediate between the chimpanzee and the gorilla.

Zoologist Ralph Garner (1896) was among the first to systematically observe primate behavior in the wild. In the late 1800s, Garner studied the behavior of gorillas and chimpanzees in equatorial Africa from the safety of a cage. (Although ethologists find they need no such protection when observing ape behavior, Garner was working in a time still smarting from the horrific exaggerations of DuChaillu and other "explorers".) Garner (1896) maintained that the kooloo-kamba and "common" chimpanzee were well-defined forms which were not at all difficult to distinguish while alive (which suggests he relied on inferred behavioral rather than morphological differences). In addition, British anatomist W. L. H. Duckworth (1898) reported on an ape specimen in his possession which was difficult to label either a gorilla or a chimpanzee. He concluded that the creature was a representative of DuChaillu's kooloo-kamba, noting that its large size provided some claim to an intermediate position between the chimpanzee and the gorilla. Yerkes and Yerkes (1929) reviewed the debates over the kooloo-kamba, hybridization, and intermediate gorilla-like chimpanzees. They doubted, but did not entirely reject, the possibility of gorilla-chimpanzee interbreeding, and concluded that confusing intermediate specimens which were difficult to classify reflected the close genetic relationship between these apes.

In 1938, Raingeard reported on specimens which he claimed represented a distinct form of ape intermediate between the chimpanzee and the gorilla. Schwarz (1939) rejected this claim, arguing that the specimens were in fact representatives of the lower Guinea subspecies *P.t. troglodytes*. In doing so, he recounted an earlier case, where a Dr. Vassal had presented material (skin and skulls) to the British Museum which he claimed were of an intermediate ape taxon. Schwarz (1939) examined this material and concluded that one skull was a black-faced chimpanzee (*P.t. troglodytes*), the other two being female gorillas.

Another naturalist who considered this problem was the well-known gorilla hunter Fred Merfield. He does not mention the kooloo-kamba in his 1956 book *Gorillas Were My Neighbors*, but rather discusses a gorilla-like chimpanzee known as the "*choga*" (clearly a linguistic variation of *N'tchego*). Chogas were alleged to resemble gorillas in having prominent brow ridges, some cranial cresting, black skin, small ears, and the "same smell as gorillas" (Merfield 1956:72). Merfield viewed the chogas as a rare kind of chimpanzee combining the strength of gorillas with the cunning of chimpanzees, though he felt that interbreeding between the two was not a possibility. Groves (1970) has very briefly discussed the kooloo-kamba, and claims that intermediate "pygmy gorillas" also exist, but he concluded that these forms are based on sporadic individual variation.

As noted above, this debate has most recently been rekindled by Hill (1967, 1969a). Although largely agreeing with the classification of Schwarz (1934), Hill (1969a) was struck by the persistence of local reports of the occurrence of more than one kind of chimpanzee in the general area of lower Guinea. Some of the morphological features of the kooloo-kamba outlined by Hill (1967, 1969a) are small black ears, pronounced brow ridges, an extremely prognathic face, ebony black facial color, and a "swollen" nose shaped like a gorilla's (Fig. 3). In his reviews of the genus *Pan*, Hill (1967, 1969a) erected a fourth subspecies of *Pan troglodytes*, labeling it *Pan troglodytes kooloo-kamba*. He asserted that kooloo-kamba move about singly or in small groups, and not in large troops like other chimpanzees. Both forms are said to occur side by side in the same forests, but the kooloo-kamba, according to Hill, is restricted to high level forests of the hinterland in South Cameroons, Gabon, the the former French Congo, perhaps ranging to the Zaire River (Fig. 1).

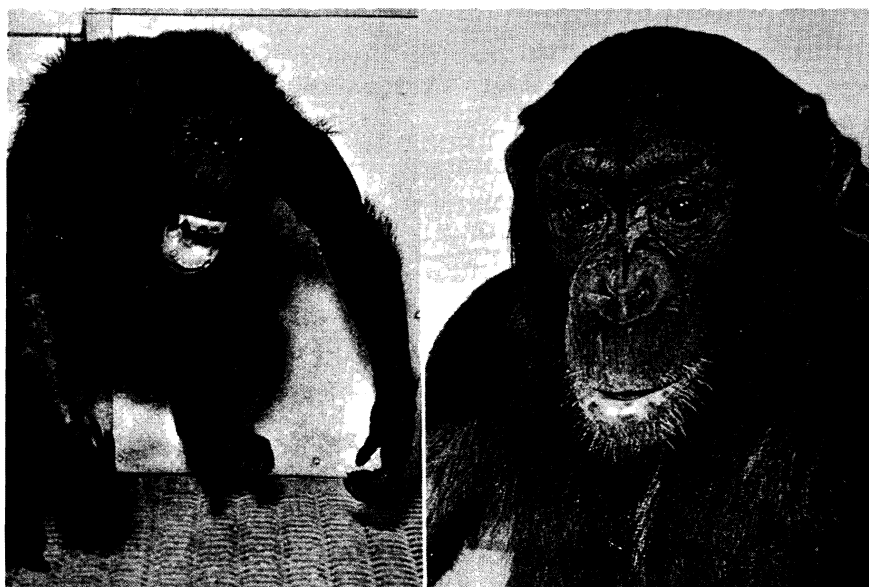


FIG. 3—(from Hill 1969a). Two chimpanzees from the Holloman Air Force Base colony, Alamagordo, New Mexico. The animal on the left was claimed by Hill to be a *Pan troglodytes kooloo-kamba*, that on the right is *P. t. troglodytes*. With permission of S. Karger Publishers, Basel.

### ZOO ANIMALS

The debate surrounding the existence of the kooloo-kamba and chimpanzee-gorilla hybrids may have reached its peak in the late 1800s, involving several living apes in European zoos. These creatures supposedly presented a mix of chimpanzee and gorilla characteristics, and many authorities disagreed over which species they should be classified with, or why they varied in the ways they did. The most well-known of these apes was "Mafuca," brought from the Loango coast of Africa to the Dresden Zoological Garden in 1874 (Yerkes and Yerkes 1929). Mafuca was described by one observer as "a wild, unmanageable creature, 120 cm in height, reminding us in many respects of the gorilla" (Hartmann 1885:215). The debate over Mafuca's status generated a substantial volume of literature. She was indeed classified as a young female gorilla by several

people, although many vehemently maintained that she was in fact a chimpanzee. Still others stressed the possibility that Mafuca was the offspring of a mating between a chimpanzee and a gorilla. She was pictured in Hartman (1885), Brehm (1920), and Yerkes and Yerkes (1929). Noted British anatomist Sir Arthur Keith (1899) assigned Mafuca to DuChaillu's kooloo-kamba species. The situation was confounded not only by different conclusions, but also by the fact that several investigators apparently changed their minds during the protracted debate.

A second captive pongid which engendered similar controversy was the adult female "Johanna" from the collection of Barnum and Bailey. Although the circus owners believed her to be a gorilla, Keith (1899) concluded that Johanna was a female kooloo-kamba, of relatively vicious predisposition, and characterized by the peculiar call for which that form was originally named. Keith (1899:296) also emphasized that Johanna was significant "because she represents a variety of chimpanzee which approaches the Gorilla in so many points that it is evident the characters which separate the two African anthropoids are not so well marked as many suppose." Duckworth (1898) commented that Johanna represented an unclassifiable ape, intermediate between the chimpanzee and gorilla. He placed her with Mafuca, DuChaillu's kooloo-kamba, and other intermediate specimens, as did Garner (1896). Johanna was illustrated in a color plate in Elliot (1913).

#### FOLK CLASSIFICATIONS

One interesting aspect of this prolonged debate, and a theme which runs throughout the century-long discussion, is that almost all claims for the existence of the kooloo-kamba or other intermediate taxa are made with supporting references to indigenous "folk taxonomies." In his 1852 letter to Geoffroy Saint-Hilaire, Franquet noted that the Africans of Gabon called the gorilla *N'gena* and his supposedly newly discovered ape species the *N'tchego*. As for what they called the "common" chimpanzee, Franquet (1852:94) had to admit: "Je l'ignore, parce que je n'ai pas pensé à leur demander." [I do not know that, because I did not think to ask them.] DuChaillu also relied on African naming systems to help sort out chimpanzee variation and support his arguments for new species assignments. He claimed that the Africans of the area called *Pan troglodytes* (then *Troglodytes niger*) by the name *Nschiego*, or the label used by Franquet (1852). To support the validity of a new species of "bald-headed" chimpanzee which he called *Troglodytes calvus*, DuChaillu (1860, 1890) noted that the Africans knew the creature by the name of *Nschiego mbouvé*, meaning something like "another tribe of *Nschiego*." In addition, DuChaillu (1860, 1890) stressed that the indigenous peoples knew his other newly-discovered ape species by the name of *kooloo-kamba*, or simply *kooloo*, on the basis of its distinctive call.

Garner (1896) also cited native naming practices as evidence for the existence of the kooloo-kamba as distinct from the *nytigo* (the *N'tchego* or *Nschiego*). Furthermore, he described (Garner, 1896:211) another variety of ape in this area based on the folk classification:

In the great forest regions of Esyira, the natives described to me another kind of ape, which they averred was a half-brother to the gorilla. They know the gorilla by the native name *njina*, and the other type by the name *nytil*. They did not confuse this with the native name *nytigo*, which is the name of the chimpanzee, nor with the *kulu-kamba*, all of which are known to them.

This account would give us another kind of gorilla-like chimpanzee in addition to the kooloo-kamba.

In his 1956 book, Merfield notes that in the Batouri district of central Africa, the black-faced chimpanzee (or Choga) is known by Africans as *N'Killingi*, which means

"gorilla's brother." A brief excerpt from Merfield's notes gives additional evidence; he entered the following for one specimen: "extremely hairy beast, *N'Bodgil* the native name of this beast, means Gorilla-like. As they were carrying it in at first glance I thought it was." Raingeard (1938) argued that a form of ape intermediate between the gorilla and the chimpanzee existed in Gabon. Differentiated from both of these species by the native inhabitants, this ape was supposedly given names meaning "chimpanzee-gorilla" in the various local dialects. In Akélé, the name of this creature was the *Koula-Nguia*, which does seem to be a combination of native names for the kooloo-kamba and the gorilla. Vassal (in Schwarz, 1939) mentioned an intermediate ape species from central Africa which had the local label *Dediéka* (this could be a variation of *N'tchego* or *Choga*). In their description of African mammals, Perret and Aellen (1956:445) wrote:

Les Boulous appellent le chimpanzé: *wo'o*. Ils emploient le nom: *ébôt* pour les individus très âgés qu'ils prennent pour un hybride du chimpanzé et du gorille. Le gorille, comme le chimpanzé, est encore commun dans le région de Sangmelima. Il est connu, chez les Boulous, sous le nom de: *nji* ou *ngui* [The Boulous called the chimpanzee: *wo'o*. They use the name: *ébôt* for very old individuals which they take for a hybrid between the chimpanzee and the gorilla. The gorilla, like the chimpanzee, it is still known in the region of Sangmelima. It is known, among the Boulous, under the name of *nji* or *ngui*.]

It is clear from this passage that Perret and Aellen (1956) believed such "hybrid" intermediates to be simply aged common chimpanzees. Further, one of the names used here for the gorilla (*nji*) would seem to be the same as Garner's (1896) supposed new intermediate variety, or the *ntyii*.

Can we take these various indigenous labels as support for the existence of the kooloo-kamba, or a chimpanzee variety more closely approaching the gorilla? Hill (1967, 1969a) clearly did, and many of the naturalists cited above felt similarly. Others have reached a different conclusion, however. For example, Schwarz (1939: 58) cautioned his fellow naturalists:

Le *kooloo-kamba*, le *dediéka* et le *koula-nguia*, tous sont le même animal: Le chimpanzé à face noire de la Basse-Guinée. Sans doute les indigènes du Gabon, comme ailleurs, ne connaissent que très incomplètement les animaux de leur pays. Il faut toujours se méfier un peu de leurs rapports. [The *kooloo-kamba*, the *dediéka* and the *koula-nguia*, all are the same animal: the black-faced chimpanzee of Lower Guinea. Without doubt the native inhabitants of Gabon, as elsewhere, know only very incompletely the animals of their countries. It is always necessary to be a little distrustful of their claims.]

More complete consideration of these folk taxonomic issues would require detailed analyses of the relevant African groups and their animal taxonomies. The biggest problem here, and the fundamental flaw of the naturalists citing indigenous labels, is that no systematic attempt was made to determine the inclusive levels or hierarchies of the folk primate taxonomy. An introduction to the area of folk taxonomy and biology may be found in Raven, Berlin and Breedlove (1971), Brown (1979, 1982), Hunn (1975), Dougherty (1978), Gould (1979), and the series of articles in the August 1976 *American Ethnologist* special issue on folk biology.

It would seem that individual ape specimens have often elicited as much disagreement and debate among native African classifiers as among Western naturalists themselves. For instance, in the late 1800s a European hunter showed the skin of an ape which he believed to be the product of chimpanzee/gorilla hybridization to various native hunters, asking them what they called this animal. Most of the Africans labeled it a kooloo-kamba, but several called it the *Nschiego* or *Babu* (chimpanzee), and a few claimed it was the *N'jina* (gorilla) (Meyer 1881). Part of the resolution of this classificatory confusion may be that Western biologists have often erroneously assumed that indigenous

folk classifications closely correspond to our own Linnaean system. That such is not the case seems clear from a passage in the field notes of Fred Merfield, which I examined at the Powell-Cotton Museum in Birchington, U.K. In describing three chimpanzees from the same troop, Merfield wrote (dates unknown):

The above beast is out of the same troop or family as nos. 449 and 450 and as the three beasts were quite different, it shakes my faith as to really black-faced chimps or chogas being a separate race. I have described the colour of the foregoing beasts as near as possible, and have also made minute enquiries from various natives to try and find out if they recognize more than one race of chimps. They do not. The different names they have for chimps, generally speaking, depends on if the beast is large or small in build, old or young, grey hair or black haired. The last six chimps I have had in I have asked the native name for each beast from three or four independent natives, but they could not agree on the names, so the various native names mean nothing.

Under another chimpanzee labeled "Choga," Merfield added: "Natives told me this was *Pamma Guargue* and not *N'Bodgil*. It appears that they change the name according to size and colour of hair as already mentioned. I cannot get any clear explanation." This assessment is supported by the comments of another African visitor, R. F. Burton (1876:42), who noted two native names for chimpanzees, *Nchigo Mpolo*, meaning "large chimpanzee," and *Nchigo Njué*, "white-haired chimpanzee." DuChailu's (1860) *Nschiego mbouvé* is probably a similar descriptive tag. Therefore, at least some of the variation in the indigenous labels seems to relate to description of physical differences among individual specimens. Hays (1983) notes that the Ndumba of New Guinea distinguish among certain closely related groups of animals on the basis of features such as color pattern, tail length, and overall size. We should not assume that indigenous classifiers make divisions for the same reasons or on the same bases as Western taxonomists (Dougherty 1978). Brown (1982) notes that individuals in "small-scale" societies frequently know and utilize many names for zoological and botanical groups. Additional work examining finer levels of classification of individual variations within species or subspecies categories would be of interest to the present case.

## CONFUSION AND VARIATION

One of the primary reasons for the plethora of generic, specific, subspecific, and infrasubspecific designations by early naturalists undoubtedly relates to an inadequate appreciation for the range and meaning of variation among individuals and within groups. Mayr (1976) has labeled such thinking in terms of discrete and static types as "essentialism," nothing that it was a fundamental characteristic of the pre-Darwinian view of the natural world. Although we credit Darwin with the first real appreciation of individual variation and population thinking in biology, it took many years before this understanding was fully incorporated into studies of natural history and classification. Furthermore, many biologists of the 19th century interpreted morphological variation in terms of the "great chain of being" (Lovejoy 1936). Thus, one goal of studies of animal classification was to fill in the gaps between already discovered forms with groups which *a priori* must exist. The words of Paul Topinard (1876, in McKown and Kennedy 1972: 174) reflect this sentiment well:

. . . between one type and another, sufficiently recognized for naturalists to make them the representatives of special groups, whether of order, family, genus, or species, some variation of the organ, or some bastard species, almost always comes in to establish the transition. *Natura non facit saltum.*



In regard to the foregoing remarks, it is perhaps ironic to note that indigenous classifications may have recognized and encompassed individual variation more fully than did our own early taxonomies. Finally, one additional reason for the erection of new, albeit intermediate, categories relates to "discoverer's bias" (Simons 1972), or the tendency to argue that one's own discovery represents a previously unknown form (genus, species, subspecies, etc.).

Discrepancies and contradictions in the morphological and behavioral characterizations of the purported kooloo-kambas or intermediate forms clouds the likelihood of the actual existence of such a distinct species or subspecies. To cite but several examples, while Franquet (1852), Hill (1967, 1969a), and others stressed the small size of the ears in the gorilla-like chimpanzees, DuChaillu (1860, 1890), in his original description, claimed that the ears were very large. Similarly, DuChaillu (1860, 1890), Garner (1896) and others described the face as very flat and human-like, the least prognathic of all the apes, whereas Hill (1969a) cited as a characteristic feature of *Pan troglodytes kooloo-kamba*, the "extremely prognathous face." Such variance is also found in the labels. Thus, in discussing gorilla-like chimpanzees, Merfield (1956) does not mention the kooloo-kamba, referring instead to the chogas, whereas Hill (1969a) simply lists "choga" as but one of the many synonyms for the lower Guinea subspecies of chimpanzee known to taxonomists as *Pan troglodytes troglodytes*, or the black-faced chimpanzee.

The behavioral descriptions of this purported variety are no more consistent. Hill (1967, 1969a) followed several earlier investigators (e.g. Keith 1899; Hartmann 1885) in describing the kooloo-kamba as cunning, malicious, and of savage disposition. By contrast, Garner (1896:41) referred to the kooloo-kamba as "a high order of chimpanzee, characterized by a kindly expression and confiding and affectionate to a degree beyond any other animal." And finally, recalling that the name of this ape variety is an onomatopoeic label based on its distinctive cry of "kooloo," it is of interest to note that in the 1860s when the Englishman Winwood Reade (1864:187) asked African hunters to imitate the call of the kooloo-kamba, he reported that they made a noise like "ee! — ee! — a—a—al." In sum, although the persistence of this century-long debate is in some ways suggestive, Hill's (1967, 1969a) brief summaries camouflage a number of important inconsistencies and problems in these discussions.

Further confusion in terms of the descriptions of the kooloo-kamba and other intermediate gorilla-like chimpanzees is raised when we consider that Mafuca, the ape from Dresden described above, might have been a bonobo or pygmy chimpanzee (*Pan paniscus*) (Gijzen 1975). The small ears, coal-black face, and nasal region of some bobobos do indeed recall the general appearance of gorillas. Yerkes and Yerkes (1929) made this observation and Susman (1980) has more recently noted and illustrated this similarity. Jungers and Susman (in press) argue that pygmy chimpanzees are relatively more robust and "stocky" than at least the eastern variety of common chimpanzees (*P. t. schweinfurthii*), and thus more closely resemble gorillas. The geographical range of the bonobo chimpanzee does not coincide with the areas from which other gorilla-like chimpanzees and the kooloo-kambas have been described (Fig. 1), although Urbain and Rode (1940) claimed that their specimen of *Pan paniscus* came from the northern (or right) side of the Zaire River. Reynolds (1967) also discusses a possible extension of the present range of *Pan paniscus*. Further, Nishida (1972) gives a second-hand report of local claims that two kinds of chimpanzees co-exist in the Lac Tumba region of Zaire, south of the Zaire River. To add to the potential confusion, Freckhop (1935:11) compared the cry of a captive bonobo to that of the kooloo-kamba, although the bonobo's cry is usually given as a high-pitched "hi! hi! hi!" by other observers (e.g. Hill 1969a). Freckhop (1935) also noted the curious fact that to the southwest of Lodja (in the range of *Pan paniscus*), one finds the locale "Tsheko," recalling the indigenous name for the western subspecies of common chimpanzee (*P. t. troglodytes*).

As if the confusion surrounding the existence of gorilla-like chimpanzees were not enough, several reports of "pygmy gorillas" have been made through the years (e.g. Elliot 1913; Freckhop 1944; Groves 1970), giving us potential chimpanzee-like gorillas also. These reports have never been confirmed, and the skulls of the intermediate creatures have turned out to be either large male chimpanzees or small female gorillas (Groves 1970).

An additional consideration is that Hill's (1967, 1969a) designation of the kooloo-kamba as a subspecies of *Pan troglodytes* would appear to violate the modern taxonomic understanding of the subspecies (Mayr, 1969), which requires such groups to be geographically distinct. For example, Hill (1967:53) notes of *P. t. troglodytes* and *P. t. kooloo-kamba* that: "Both forms are said to occur side by side in the same forests, but the koolokamba is restricted to the high level forests of the hinterland in South Cameroons, Gaboon and the former French Congo." Furthermore, Hill's (1967, 1969a) assessment of the morphological criteria distinguishing the various subspecies of *Pan troglodytes* has been criticized by Reynolds and Luscombe (1971). A comparison of the subspecific status assigned by Hill to live *P. troglodytes* in the chimpanzee colony at the Holloman Air Force Base (New Mexico) with independent records indicating their country of origin yields "a very poor correlation" (C. E. Graham, personal communication). The two live animals at Holloman AFB assigned to *P. t. kooloo-kamba* by Hill are of unknown origin.

### CONCLUSIONS

We can draw several conclusions from this interesting and protracted debate over the existence of the kooloo-kamba chimpanzee and other apes purported to be hybrids or intermediate between the gorillas and chimpanzees. One is that a poor knowledge of indigenous languages, a failure to adequately determine hierarchical levels of inclusivity for folk taxonomies of the apes, an inadequate appreciation of individual variation, and a desire to discover previously undescribed forms between known taxa all contributed to the confusion surrounding the enigmatic kooloo-kamba. Furthermore, early naturalists and scientists tacitly assumed that indigenous labels reflected subspecific or specific designations, when they were frequently intended to signify individual variants. The history of the classification of the kooloo-kamba, by itself, may seem esoteric at best. However, it provides an example of what probably occurred in the taxonomic history of most non-European animal groups, and thus offers insights into a more general phenomenon in the process of classification.

But the very persistence of this debate over the existence of the kooloo-kamba is also significant and revealing. Purported kooloo-kambas and other individuals claimed to be intermediate between chimpanzees and gorillas have generally turned out to be either large male chimpanzees or small female gorillas, and this fact leads us to what I consider the most important implication of this debate. The disagreement, confusion, variation, and use of intermediate or hybrid categories in both Western and indigenous classifications reflects an important biologic reality, i.e., gorillas and chimpanzees are very closely related animals with patterns of morphological development which coincide and overlap. Recent genetic investigations in the great apes have demonstrated this similarity (e.g. Bruce and Ayala 1979, Templeton 1983). This congruence is so great that the production of viable hybrids remains a real possibility, although I emphasize that this has never been attempted in captivity nor demonstrated in the wild. Chimpanzee and gorilla ranges overlap in lowland western Africa, but Jones and Sabater Pi (1971) provide evidence of ecological separation between the genera in one such area of sympatry.

On the morphological level, early workers such as Keith (1899) and Yerkes and Yerkes (1929) argued that chimpanzees and gorillas were quite similar. More recently,

I have shown that patterns of ontogenetic development of the skull and postcranium are very similar in chimpanzees and gorillas, many of the shape differences between adults of these species being the result of the ultimate size differences, or the point of termination of the similar growth patterns (Shea 1981, 1983, in press). This is probably why it is large and robust male chimpanzees (or small female gorillas) which have been labeled kooloo-kambas or hybrid forms. Frechkop and Marit (1968) note the appearance of "pseudo-gorilla-like" features, such as cranial crests and a general robusticity of the masticatory apparatus, in certain specimens of male chimpanzees (which, by the way, originate from the southeast rather than the southwest portion of the range of *P. troglodytes*).

Although there clearly are qualitative morphological differences between chimpanzees and gorillas, these findings help clarify some of the confusion and debate over patterns of variation and intermediate varieties. Indigenous folk taxonomies capture and reflect the same morphological overlap and similarity between chimpanzees and gorillas by the use of such "hedging" (Lakoff 1973) labels as "gorilla-like," "chimpanzee-gorilla," "gorilla's brother," and so forth when describing and classifying individual chimpanzees. Our own classifications offer the kooloo-kamba, the choga, and other intermediate varieties, as well as the varying opinions of the long series of primatologists and naturalists discussed here. Although the possibility of the existence of *Pan troglodytes kooloo-kamba* must be acknowledged, the real lesson of the debate over the kooloo-kamba relates to our attempts to deal with the continuities and discontinuities of the natural world in our classifications.

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