

HARUAI ANIMALS AND HARUAI SOCIETY¹

by
Bernard Comrie

What is the best way to classify animals? At first sight, a member of a Western society might well be inclined to answer that the best way is to follow the accepted scientific classification. And certainly, an educated member of such a society would be expected to know that a whale is a mammal, and would probably be subject to ridicule if s/he were to express the belief that a whale is a fish. However, in other cases insistence on scientific classification might be judged to be pedantic. For instance, according to the accepted scientific classification a spider is not an insect; note that a spider has eight legs, whereas part of the scientific definition of 'insect' is 'having three pairs of legs'. But someone who insisted on telling us that a spider is not an insect would probably be considered a bore. And for some animals ordinary language does not really provide any classification. For instance, a snail is just a snail, and its scientific classification as a mollusk is not part of English-speakers' every-day classification of animals.

If we digress for a moment to plants, then there are some even more surprising discrepancies between scientific classification and the way in which speakers of the English language actually classify items. Thus, the peanut is probably the prototypical nut for most speakers of English, yet biologically the peanut is not a nut but a legume, making it in fact more closely related to the pea than, for instance, to the cashew nut. And the tomato is notorious: biologically it is a fruit, but it is used primarily in the same way as vegetables (e.g. in salads). The same applies to the avocado. For legal purposes, a U.S. Supreme Court ruling of 1893 states that produce should be classified as fruit or vegetable depending on its usage, and not on its biological classification, thus explicitly going against the accepted scientific classification in such cases as the tomato and the avocado.

The very term 'animal' provides a similar discrepancy between scientific and English ordinary-language usage. In ordinary-language usage, the term is basically restricted to four-footed creatures, thus excluding human beings, birds, fish, insects (and spiders!), while including non-human mammals, frogs and other amphibians, and lizards. (There are also some marginal members of the ordinary-

language class 'animal', such as snakes, also sea-mammals like whales and dolphins, presumably assimilated on the basis of their similarity to other clear-cut instances of 'animal', such as other reptiles and mammals.) As a technical term in scientific nomenclature, 'animal' includes everything mentioned in this paragraph.

What all of this boils down to is that even in relatively scientifically-minded cultures such as those where English is spoken, there are many instances where a classification of animals (and plants) is used that deviates at times quite considerably from the scientific classification; the ordinary-language classification, often referred to as a 'folk taxonomy', relies not only on those features that guide the scientific classification but also on other features, such as social function (e.g. human beings do not have the same social functions as other animals) and superficial similarity (e.g. spiders look much like insects). When looking at other cultures, we should not therefore be surprised to find discrepancies between their classification of animals (and plants) and scientific classification. In particular we should beware of attributing such discrepancies to ignorance; in less technologically oriented cultures people are often much more knowledgeable about local animals and plants than are people in more technological cultures, and their folk taxonomies usually make perfect sense once one takes functional factors into account.

In this article, I want to examine the classification of animals among the Haruai, who inhabit the south-western corner of Madang Province, Papua New Guinea. Their home is in the New Guinea Highlands, with most Haruai (including those with whom I have worked most intensively) living at an altitude of around 6,000 feet; the animals that I will be discussing are thus, with one or two exceptions, those that inhabit that altitude. (Some Haruai live at lower altitudes and even the Haruai with whom I worked have some knowledge of animals living at lower altitudes, though such knowledge is often quite sketchy.) It will be useful first of all to indicate the kinds of animals living in this part of the New Guinea Highlands. I will present them by following, essentially, the scientific classification. I will concentrate on the so-called higher animals, mainly because this is the area where Haruai provides the most interesting material.

Mammals

The island of Papua New Guinea belongs to a part of the world, roughly between the island of Bali and the Australian mainland, which is very poor in the range of mammal life represented. Probably only four groups of mammals were present in Highland New Guinea before the arrival of humans, namely rodents, marsupials (mammals with a pouch), bats, and monotremes (egg-laying mammals). Within each of the two groups of rodents and marsupials, there is a considerable number of species, of various sizes, ranging up to that of the tree kangaroo. Only one monotreme is represented in New Guinea, the echidna (spiny ant-eater). There are also pigs and dogs, probably introduced by humans, and of course humans. There are both domestic and wild (feral) pigs and dogs, although this is not a species difference: the wild pigs and dogs are simply pigs and dogs that escaped and their descendants. The pig is the largest non-human mammal in New Guinea (excluding animals imported within the last hundred years, such as cows and horses, none of which are found in the Haruai area); the absence of indigenous large mammals is particularly striking, with nothing like a cow, a horse, a sheep, a bear, or a lion. There are also no non-human primates (monkeys, apes).

Birds

Highland New Guinea has a very rich inventory of birds, including the various species of bird of paradise. A point that will be of interest below is that this inventory also includes some species of cassowary, an emu-like flightless bird.

Reptiles

In the Haruai area there are a number of lizards, mainly small ranging up in size to the gecko, a number of snakes, again mainly small – and at this altitude snakes are not very much in evidence. The Haruai are also familiar with the crocodile, which lives at lower altitudes in the total area occupied by the Haruai.

Amphibians

The moist climate of New Guinea is ideal for amphibians, and the island as a whole, including the Highlands, has a rich variety of tail-less amphibian (frog- and toad-like) species.

Fish

The small fast-running streams of Highland New Guinea provide a number of small fish (which are of no interest, e.g. as food, to the Haruai), plus eels.

Other

As one might expect in the tropics, Highland New Guinea is rich in insect life, and there are also at least two species of spider in the Haruai area. There are also various miscellaneous animals, such as grubs and worms, which will play a minimal part in what follows.

In discussing in detail the Haruai folk taxonomy of animals, I will start from those groups where there is most agreement between the scientific classification and the folk taxonomy. In order to restrict the term 'species' to its scientific use,² it will be useful to have a different term to refer to classes identified within the Haruai folk taxonomy, and for this purpose I will use the term 'taxon'; note that a taxon can be at any level of the taxonomy, so that, in the English folk taxonomy for instance, several individual bird taxa are grouped together under the general taxon *bird*.

In the case of amphibians, there is an exact correspondence between the Haruai term *haw* and the set of amphibians represented locally, presumably reflecting the very distinctive nature, both in terms of shape and behavior, of tail-less amphibians relative to other kinds of animals. Tail-less amphibians play an important role in the Haruai diet, many species being eaten as a supplement to the basic vegetarian diet (with taro as its staple), especially, though not exclusively, by women and children. As noted above, the only amphibians found in New Guinea are tail-less amphibians; there are

no tailed amphibians like newts. It would be interesting to see how the Haruai would classify a newt, which is in behavior quite similar to tail-less amphibians, but in appearance more like a lizard; unfortunately, I have not been able to carry out this test.

In English, the set of tail-less amphibians is conventionally divided into frogs and toads, and one might ask whether Haruai has anything corresponding to this division. In fact, it does not, each taxon of tail-less amphibian having its own name. But if anything it is the English predilection for dividing tail-less amphibians into frogs and toads that is problematic. In England, where the terms arose, there are only three indigenous species of tail-less amphibian, the common frog, with a smooth body and laying eggs (spawn) in a clump, and the common toad and the natterjack toad, both with warty bodies and laying eggs in a string. European tail-less amphibians can generally be assimilated to these two classes, so that the edible frog, introduced at some time into England from the European continent, also has a smooth body and lays eggs in a clump, so can clearly be classified as a frog. The richer range of tail-less amphibians found in New Guinea shows, however, that this English classification cannot be generalized to the world as a whole. Tail-less amphibians in New Guinea come in all degrees of wartiness, from the smoothest to the wartiest, with no clear-cut dividing line between them. While many of New Guinea's tail-less amphibians lay eggs, there are some that give birth to live young, i.e. miss out the egg and the tadpole stage to produce live little 'frogs'. Thus, the division of tail-less amphibians into frogs and toads is an artifact of the biological environment in which the English language first developed.

The various kinds of small fish found in the streams of Highland New Guinea are referred to by the Haruai as *k^wöbsal* (synonym: *k^wöymay*). The eel is referred to as *wnaŋ*, and is not assigned to any higher-level class. As the Haruai have become acquainted with other kinds of fish, especially in the form of canned fish (with pictures of the fish on the cans), they have not extended their term *k^wöbsal* to encompass other fish; rather, they have taken the Tok Pisin term *pis* as a cover-term for all fish other than *k^wöbsal* and eels. There is thus no overall term for 'fish', but rather three terms: *k^wöbsal* 'local useless fish', *wnaŋ*, 'local useful fish', *pis* 'exotic fish', a classification that makes more sense socially than it does biologically.

With the class of birds, there is close correspondence between the Haruai class *yöwr* and the scientific class of birds. In particular, the Haruai include cassowaries, though flightless, under *yöwr*. This is in contrast to the practice of some neighboring groups. The Kalam, for instance, do not consider cassowaries to belong to the group of *yakt*, their term most closely corresponding to Haruai *yöwr* and English *bird*; rather, cassowaries form a distinct class, not subsumable under any of the other classes. Both treatments of flightless birds are found across the world in languages where such birds are indigenous, reflecting the conflict between the fact that these animals are so obviously structurally akin to flying birds but lack what is probably the most salient characteristic of birds, namely flying ability. In the other direction, however, the class of *yöwr* is somewhat more extensive than the scientific (or English-language) class of birds, because it also includes bats. It should be noted that the Haruai are perfectly well aware of the difference between birds and bats, e.g. in terms of having feathers versus fur, or in terms of laying eggs versus not laying eggs. But in functional terms, the similarities between bats and birds are sufficient to justify grouping them both into the same class. It is interesting to speculate on the definition of this class: clearly it is not 'all birds', because that would exclude bats; equally clearly, it is not 'warm-blooded flying animals', because that would exclude cassowaries. It seems that the core of the class is formed by flying birds, but the class is then extended in the one direction to include non-flying animals that otherwise share the properties of birds, and in the other direction to include vaguely bird-like flying animals.

I shall deal briefly with reptiles. Scientific English has the cover-term *reptile* used for all reptiles, although it is hardly part of ordinary-language usage. Rather, less specific terms like *snake* and *lizard* are used in ordinary English. Haruai, by contrast, does have a single term, *gas*, that corresponds closely to 'reptile', in particular including snakes and (most) lizards. There are then more specific terms for individual species and groups, such as *söyö* for small lizards (but excluding the gecko). But the Haruai do not extend *gas* to cover the crocodile; as noted above, crocodiles are not indigenous to the area inhabited by the majority of Haruai, but the animal is sufficiently fearful that even those living at 6,000 feet have heard of it. Conversely, the term *gas* is extended to some reptile-like small animals, such as earthworms, which are biologically far removed from

reptiles. Incidentally, the Haruai (and the Kalam, but not some other neighboring groups) do not eat reptiles.

The most interesting aspect of the Haruai folk taxonomy of animals is the sub-classification of mammals (excluding bats, already treated above). There is no indigenous term subsuming all and only mammals, though of course this is also true of ordinary-language usage in English; indeed the term *mammal* is hardly part of the ordinary language, rather than of the technical vocabulary of biology. Some mammals are not considered part of any higher-level taxon. This applies to human beings, who are simply *nöbö* 'person'. (It should be noted that the Haruai do believe that certain people, namely sorcerors, can and do assume the shape of animals, of the class *wrap* described below, and birds.) The same also applies to pigs, which are simply *hön*, and to dogs, which are simply *wöñö*, and are not assigned to any higher-level taxon.³ Pigs and dogs are presumably considered distinct classes because of their important role in Haruai society, pigs being the only domestic animal bred for food and dogs being important adjuncts in hunting. Indeed, pigs form a centerpiece of Haruai ceremonial, as in much of the rest of the South Pacific. However, it should be noted that the same terms, *hön* and *wöñö*, are also applied to wild pigs and wild dogs. Wild pigs are the only large game available, and are indeed hunted by the Haruai, thus playing an important role in the society, but wild dogs play little or no role, their assimilation to the class *wöñö* being determined by their obvious similarities to domestic dogs; for instance, domestic dogs may run away and become wild dogs, domestic and wild dogs sometimes interbreed.

All other mammals, i.e. those classifiable biologically as rodents, marsupials, and monotremes, are divided by the Haruai into two taxa, *wrap* and *döyw*, with no correlation between the folk taxonomy and the scientific classification. This is not because the Haruai are ignorant of those factors that form the basic of the scientific classification; in reply to questions, they can, for instance, tell from memory whether a particular animal species has a pouch or not (the most salient characteristic of marsupials), and whether it lays eggs or not (the most salient characteristic of monotremes). Rather, it is because these distinctions are not particularly salient within their culture, while other distinctions are more salient. At first sight, the difference between *wrap* and *döyw* might seem to lie primarily in size: *wrap* refers to medium-sized mammals, *döyw* to small-sized

mammals. The dividing line is the sugar-glider – rather interestingly, precisely the same dividing line is found in Kalam, and speakers of both languages are inconsistent in sometimes assigning the sugar-glider to the class of medium-sized mammals, sometimes assigning it to the class of small-sized mammals. One might nonetheless ask why size should be taken as the defining feature separating the two largest taxa of mammals from one another, and why the sugar-glider should be the dividing line between these two classes.

It turns out that for the Haruai, as for the Kalam, this difference in size correlates with an important difference in the social function of the relevant animals. Haruai society is overall quite egalitarian, with no major differences of wealth and no specialization of occupation, with two clear sets of exceptions: there are clear gender distinctions between activities that are carried out by men and those that are carried out by women, and clear age distinctions between activities appropriate to children and those appropriate to adults. Thus different aspects of farming (usually called 'gardening' in the South Pacific) are assigned to men and women. And the important secondary food activity of catching animals likewise shows a sharp differentiation. It is considered appropriate for men to hunt larger animals, including both wild pigs and those mammals referred to as *wrap*. It is considered appropriate for women and children to forage for small animals, which among mammals means those referred to as *döyw*. Thus the crucial difference between *wrap* and *döyw* is not, as it might seem to a superficial outside observer, that of size, but rather that of social function, which happens to correlate with size.

In Kalam, this categorization in terms of the difference between animals hunted by men and animals foraged for by women and children is carried a stage further. Kalam has a single term, *as*, that includes both those mammals referred to as *döyw* in Haruai and all frog-like animals (tail-less amphibians).⁴ This makes no sense in terms of the biological classification of animals, since it groups together amphibians and a subset of mammals, while excluding other mammals and also, for instance, reptiles (which stand biologically between amphibians and mammals). However, it makes perfect sense in terms of social function: these are the animals that women and children typically forage for. Incidentally, the Kalam have no difficulty in learning other languages, such as Tok Pisin, where frogs are not subsumed under the same class as some mammals: they are clearly aware of the relevant differences, but choose to regard these

differences as less important than social function for the purposes of their own folk taxonomy.

We have thus come across the following primary taxa⁵ of indigenous higher animals in Haruai: people (*nöbö*), pigs (*hön*), dogs (*wöñö*), medium-sized mammals (*wrap*), small-sized mammals (*döyw*), birds and bats (*yöwr*), tail-less amphibians (*haw*), snakes and lizards (*gas*), eels (*wnan*) and small fish living in fast-flowing mountain streams (*kwöbsal*). Each of these is a highest-level category in the Haruai classification of animals, i.e. there is no term that subsumes two or more of these classes. Moreover, there is no single term that subsumes all of these classes taken together, i.e. there is no term corresponding to (the scientific use of) 'animal'.

One way in which one can gain further insight into the Haruai folk taxonomy of animals is by asking how the system is extended to cover new animals with which the Haruai come into contact. It was already noted above that the Haruai do not subsume exotic fish (in particular, sea fish) under the same term, *kwöbsal*, as they use for the small fish that live in their local fast-flowing streams. While no exotic larger animals have yet been introduced into the Haruai area, some Haruai have seen cows and horses in nearby areas. They have no hesitation in classifying these animals under the term *hön*, which is literally 'pig'. I have also experimented by showing Haruai pictures of other exotic animals. This procedure has certain disadvantages – for instance, informants relied primarily on the physical form of the animal, although in some cases they would elicit further information by asking questions about its function – but nonetheless provides interesting results. In particular, large exotic mammals tend to be classified as *hön*, the closest analog in Haruai culture; since Haruai *hön* covers both domestic and wild pigs, the terms can be extended both to domestic animals (like cows, horses, and sheep) and to wild animals (like deer), in particular to those wild animals that, like wild pigs, are hunted. Thus *hön* refers prototypically to pigs, but can be extended to other large domestic or wild (in particular, hunted) animals. However, mammals that are known to be predatory are classified preferably, at least by some speakers, as *wöñö*, literally 'dog', relying on the common feature that these animals hunt (as opposed to being hunted, the more likely fate of animals that happen to live in Haruai territory). Other mammals are normally divided into *wrap* and *döyw* according to size, parallel to the superficial distinction in Haruai for indigenous mammals, but on a

number of occasions Haruai would ask me whether the animal in question could be eaten before deciding whether it could appropriately be considered *wrap*. (If my answer was negative, then the animal could not be assigned to any class. For *döyw*, incidentally, edibility is not important, so that all small mammals are likely to be classified as *döyw* without reservation; see footnote 4.) Some exotic mammals do not fit readily into any indigenous class. Pictures of monkeys and apes elicited particular puzzlement: as noted above, there are no non-human primates in New Guinea, and to someone who does not know about monkeys the first sight of this apparent caricature of a human can be quite a shock! In the end the Haruai I asked agreed that monkeys could be considered *wrap* if they could be hunted and eaten, which unfortunately does not completely solve the problem, since there are cultures (like many African and Southeast Asian cultures) where monkeys can be eaten, and others (like most European cultures) where monkeys (even if available for consumption) would probably not be eaten.

To summarize, Haruai provides a folk taxonomy of animals that is in many respects at variance with the accepted scientific classification. This does not reflect ignorance of those features that underlie the scientific classification – as hunters and foragers the Haruai have very detailed knowledge about the animal species that inhabit their territory. Rather, greater reliance is placed on other features, in particular features that are related to the function that different animals have in Haruai society.

Department of Linguistics
University of Southern California
CA 90274-2406

Notes

1. This material is based upon work supported by the National Science Foundation under Grant BNS-8504293. Preparation of this material was also supported by the Center for Excellence in Teaching of the University of Southern California. I am grateful to the Madang Provincial Research Committee for permission to conduct this research and to the Summer Institute of Linguistics (Papua New Guinea Branch) for invaluable material

aid. I am especially grateful to the Haruai people for their hospitality and enthusiastic support of my work on their language. I have benefited immensely from the studies of Kalam (Karam) animal classification by R.N.H. Bulmer, I.S. Majnep, J.I. Menzies, F. Parker, and M.J. Tyler (see the list of references).

2. It should be noted that in some instances the scientific identification of species is far from obvious; it is only within the last few decades that the (black) panther of South Asia and the jaguar of South America were identified as variants of the same species.
3. Another animal that seems not to be assigned to any higher-level taxon is the (imported) domestic cat, called *gry* in Haruai. The origin of this term and its assignment within the folk taxonomy are unclear to me. The word is clearly not Tok Pisin (which has *pusi*). My speculation is that *gry* is perhaps the name of an indigenous cat-like (in behavior) mammal, perhaps from a neighboring language, that has been assigned to the domestic cat; the domestic cat, because of its unique function (in particular, control of house rats), is not assigned to the same higher-level taxon as this indigenous cat-like mammal.
4. Actually, the Kalam term excludes house rats, which are considered dirty and inedible by both Kalam and Haruai (and with good reason). Thus Haruai *döyw* is extended to the similar house rats, even though these are not eaten, while Kalam *as* is more functionally restricted, to small quadrupeds that women and children forage for.
5. A primary taxon is one not forming part of any higher-level taxon.

References

- Bulmer, R.N.H. & J.I. Menzies. 1972-1973. Karam classification of marsupials and rodents. *Journal of the Polynesian Society* 81: 472-479, 82: 86-107.
- Bulmer, R.N.H., J.I. Menzies, & F. Parker. 1975. Kalam classification of reptiles and fishes. *Journal of the Polynesian Society* 84: 267-308.
- Bulmer, R.N.H. & M.J. Tyler. 1968. Karam classification of frogs. *Journal of the Polynesian Society* 77: 333-385.
- Majnep, I.S. & R.N.H. Bulmer. 1977. *Birds of My Kalam Country*. Auckland: Auckland University Press.
- Majnep, I.S. & R.N.H. Bulmer. 1990. *Kalam Hunting Traditions I-VI*. (Working Papers in Anthropology, Archaeology, Linguistics, Maori Studies 85-90). Auckland: University of Auckland, Department of Anthropology.