



Sex Differentiables and the Ethnotaxonomic Status of Mammals and Other Animals in Central America and Eastern Indonesia

A Comparative Analysis

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Abstract. – Previous analysis of sex differentiable terms (or SDTs, words that distinguish sexes in humans and nonhuman animals) has shown how they can coincide with folk zoological life-form taxa and, at the same time, provide evidence of covert taxa, notably a category of “mammals.” In this article, the system of SDTs employed by the Nage of eastern Indonesia is compared with a similar system found in Central America, among the Chuj Mayans. Similarities and differences between the two systems are explored, in some instances with further reference to English SDTs, and consideration is given to how such terms may reveal universal tendencies in ways human languages register perceptual difference among animal kinds. [*Central America, eastern Indonesia, Nage, Chuj Maya, ethnotaxonomy, sex differentiable terms, life-form taxa*]

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In a previous article I presented a comprehensive analysis of a form of classification found among the Nage people of Flores island in eastern Indonesia, speakers of a language belonging to the Central Malayo-Polynesian grouping of Austronesian (Forth 2004a). Distinct from the general folk taxonomy of animals employed by Nage, this classification comprises an ordering of Nage animal categories on the basis of what I call sex differentiable terms (abbreviated as SDTs) – that is, words, ex-

emplified by English “bull” and “cow,” which distinguish sex in various nonhuman animals as well as in human beings. I was especially concerned to explore the extent to which the assignment of different SDTs in Nage corresponds to named and unnamed Nage life-form taxa (categories corresponding to “bird,” “snake,” “fish,” and “mammal”), and more particularly to show how different pairs of such terms, as applied individual folk generics (*sensu* Berlin 1992), attest to the existence of a covert category of “mammals” as a property of Nage ethnotaxonomic thought and discourse. Since then, Nicholas Hopkins (pers. comm. December 2005) has drawn my attention to an article he had published over two decades previously in *Journal of Mayan Linguistics* (1980). Describing what he calls “sex markers” applied to animal categories in Chuj, a Mayan language of Guatemala, Hopkins demonstrates an implicit classification of animal life-forms comparable in several fundamental respects to what is found in Nage. Although provided by a single Chuj-speaking informant, Hopkins’ analysis nevertheless reveals how Chuj sex differentiables map onto overt (named) and covert (unnamed) categories which for a very large part correspond to explicitly labelled life-form taxa as well as a typically unlabelled category of mammals. The present article provides a detailed comparison of Nage and Chuj SDTs and explores possible implications of such classificatory convergences in the

languages and thought of peoples belonging to geographically distant and historically and culturally quite different societies.

I

Based on information provided by Nage residing in the vicinity of the village of Bo'a Wae, the Nage system of sex differentials is summarized in Table 1. Morphological and behavioural differences motivating application of different terms (e.g., *metu* and *dhéghu*) are discussed in more detail in Forth (2004a).

Table 1: Nage SDTs.

Mosa (male) and *metu* or *dhéghu* (female): All terms apply to mammals both wild and domesticated, and only mammals. *Mosa* applies to all male mammals. Females of larger mammalian kinds (cattle, water buffalo, horses, sheep, goats, deer) are called *metu*; females of mostly smaller kinds (pigs, dogs, cats, monkeys, civets, and others) are called *dhéghu*. *Metu* also includes the females of all horned or antlered mammals.

Hase: Applies only to male murids (Muridae, rats and mice, *dhéke*). Female murids are designated as *dhéghu*, like the females of other small mammalian kinds.

Lalu (male) and *susu* (female): Apply to all birds (*ana wa ta'a co*, "flying animals," a category that also includes bats), reptiles (including snakes, *nipa*, and lizards), amphibians, fish, and insects and other invertebrates. The terms are also applied to porcupines (the Sunda porcupine, *Hystrix javanica*).

As Nage explicitly recognize, all animals (*ana wa*) whose males are not called *mosa* (or *hase*) are designated as *lalu*, while females of the same kinds are always distinguished as *susu*. In principle, therefore, the Nage system of SDTs – unlike the English system, for example – is exhaustive of all folk generic animal taxa to which Nage give names. At the same time, the pair *lalu* and *susu* serve to distinguish sex in what can be characterized as a negative class of "non-mammals," so that any newly introduced species that Nage did not recognize as belonging to the covert category "mammal" would automatically be conceived to comprise *susu* and *lalu*. The system can be further represented in a tree diagram, as in Fig. 1.

Chuj employs eight SDTs (or sex markers) for nonhuman animals. Five apply to male animals, and three to females. To a far greater extent than

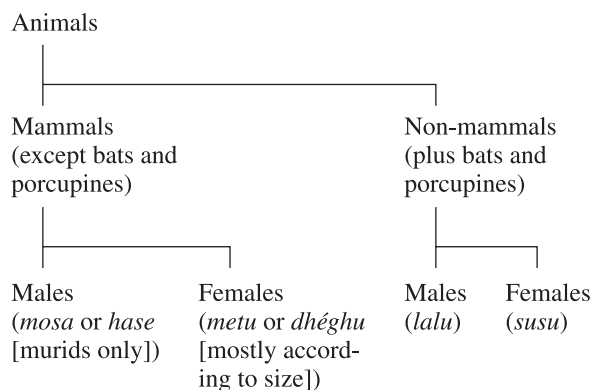


Fig. 1: Schematic summary of Nage SDTs as applied to animals (*ana wa*).

in Nage, single terms can combine with a variety of opposite sex others; hence it is necessary to treat male and female terms separately. This I have done in Table 2, where the terms are listed with English glosses provided by Hopkins. The terms are presented in a different order from the one Hopkins employs, in order to facilitate comparison with the Nage terms given in Table 1.

In Chuj, the sex marker in all cases precedes the category it modifies. Thus fish (*chay*), for example, are distinguished as '*ajtzo chay*, "male fish," and '*nun chay*, "female fish." Although nouns precede modifiers in Nage, male and female fish (*ika*) are similarly distinguished as *ika lalu* and *ika susu*. At the same time, the Nage SDTs can be used alone, so that in reference to fish one can simply speak of *susu* (females) and the *lalu* (males), and in reference to mammals *mosa* (males) and *metu* (females), and so on.

As Tables 1 and 2 should suggest, there are several more systematic differences between Nage and Chuj SDTs:

First, while Nage SDTs for non-mammals are further applied to two mammals (bats and porcupines), non-mammals are never called by SDTs for mammals. By contrast, the Chuj SDTs *xip'* and '*ix*, whose primary reference appears to be mammals, are also applied to a number of invertebrates, reptiles, and amphibians (in the case of '*ix*), and possibly a bird (in the case of '*xip*). (Numerically, at least the primary reference of *nun* would appear to be non-mammals.) In this regard Nage more closely resembles English, where SDTs that are used for several kinds of mammals, such as "bull" and "cow" and "buck" and "doe," are hardly ever applied to non-mammals. In fact, the only exception would appear to be "bull" and "cow" for crocodiles and alligators, a usage which is probably accounted for the creature's large size.

Table 2: Chuj SDTs.

<p>Male terms</p> <p><i>Xip'</i>, “male dog”: Applies to all male nonhuman mammals with the exception of horned (antlered) mammals and the tapir. Also applies to seven invertebrates and possibly one bird.</p> <p><i>Ch'a'ak</i>, “horn”: Used for male deer and the males of horned animals introduced by the Spanish (goats, sheep; but not cattle, the sexes of which are distinguished with terms derived from Spanish).</p> <p><i>'Ajtzo'</i>, “rooster” (the male of the domestic fowl, designated as “cock” in English spoken outside of North America): Applies to the males of birds (which as in Nage and most folk taxonomies includes bats), reptiles (snakes, lizards), amphibians, and fish, as well as snails and some other invertebrates, especially flying insects. (Note: the inverted commas in Hopkins' transcription have phonological value.)</p> <p><i>Mam</i>, “father”: Denotes the males of the majority of insects and other invertebrates, but also male tapirs.</p> <p><i>Winak</i>, “man” (“male human”): Applies only to males of three species of invertebrates: scorpions, “a red ant with a vicious bite,” and a kind of tick. (In the last case, males and females may also be distinguished as <i>mam</i> and <i>nun</i> [see below].)</p> <p>Female terms</p> <p><i>'Ix</i>, “woman” (“female human”): Applies to female mammals including deer, as well as female reptiles, amphibians, insects, snails, and other invertebrates. (The females of 30 named invertebrate categories are marked with <i>'ix</i>.)</p> <p><i>Nun</i>, “mother”: Applies to female tapirs, goats, and fish, and the females of many insects and other invertebrates (16 in all).</p> <p><i>Chichim</i>, “chick”: Applies exclusively to female birds (including bats).</p>

Secondly, all of the Chuj terms have independent meanings, which in each instance is apparently the term's primary sense. By contrast, the Nage terms do not have senses other than as word distinguishing sex in animals, or at least none that can definitely be related to their use as SDTs.

Thirdly, in Chuj the human sex differentiables – *winak* (man) and *'ix* (woman) – also distinguish sex in various kinds of nonhuman animals. By contrast, the Nage equivalents (*ana haki*, “man, male person,” and *fai ga'e*, “woman, female person”) are never so employed – and for this reason are not included in Table 1.

Fourthly, the combination of different male and female markers in Chuj is far more varied than in

Nage. In Nage, *susu* (female non-mammals) pairs only with *lalu* (male non-mammals) while the female terms *metu* and *dhéghu* (applied to different groupings of mammals) pair only with *mosa* (males of most mammals) and *hase* (denoting only male mice and rats).¹ In Chuj, by contrast, three of the five male terms combine with one or more of the female terms. Male *'ajtzo'* pairs with all three female markers, while male *mam* and *ch'a'ak* pair with two of the three (*'ix* and *nun*). Accordingly, the coincidence of single Chuj terms with groups of animals zoologically and ethnozoologically distinguished is rather less clear than what one finds in Nage, at least on initial inspection.

In several respects more remarkable than the differences between the two systems, however, are their similarities, and particularly the extent to which both implicitly distinguish the same broad classes of animal kinds. Thus in Chuj, the male terms *xip'* and *ch'a'ak* (among indigenous mammals applied only to deer) distinguish all mammals from the great majority of non-mammals; they also distinguish male mammals from most non-mammalian vertebrates, which are designated as *'ajtzo'*. Applying with few exceptions to male birds, reptiles, amphibians, and fish, *'ajtzo'* is thus formally comparable to Nage *lalu*, denoting all male non-mammals (as well as bats, which in Nage as in Chuj are classified as “birds”). By the same token Chuj *xip'* is comparable to *mosa*, the Nage SDT for all male mammals with the exception of porcupines (*lalu*), bats (*lalu*), and murids (*hase*).²

Other similarities between Nage and Chuj are more specific, and concern the application of SDTs to particular folk generics. The exceptional status of porcupines in the Nage system (marked for sex with the non-mammalian SDTs *lalu* and *susu*)

1 There is just one member of the Muridae whose males Nage do not specify as *hase*. This is the endemic Flores giant rat (*Papagomys armandvillei*, locally called *bétu*), an animal at least twice as large as other rats found on the island. Male *bétu* are called *mosa*, like the males of other (nonmurid) mammals. At the same time, shrews (*mucu 'o*), which are not rodents but insectivores, are classified with respect to STDs in the same way as are the majority of rats and mice.

2 In Itzaj Maya, *xib'*, presumably cognate with Chuj *xip'*, is listed as “male (human).” The related form *xib'al* means “male (animal),” denoting, for example, the males of large snakes, cats, and dogs, while *xib'il* refers to males of other animals, including *inter alia* parrots and rabbits (Hofling and Tesucún 1997: 673). While Chuj *xip'* similarly applies to a variety of male animals, especially mammals, the application of the Itzaj cognate to human males as well appears to signal a different pattern from that associated with the Chuj term. Hopkins (pers. comm. November 2007) has recently commented that he suspects the Chuj cognate once had a more general sense of “male” but is now restricted to dogs.

finds a parallel in the Chuj application of male *mam*, among mammals, only to the tapir. Similarly, the Nage application of *hase* exclusively to male murids is comparable to the Chuj use of *ch'a'ak* (meaning “horn”) for male deer as well as for male goats and sheep. Before the introduction of these two domesticates, deer, and then male deer, would have been the only “horned” animals known to the Mayans, so it can be assumed that the special sex marker reflects this peculiarity of a single folk generic.

Nage rationalize their exclusive application of *hase* to murids with reference to what they claim is a genital peculiarity found only in males of these species (Forth 2004a: 431 f.). It appears also to be a morphological peculiarity of porcupines that is reflected in an application of SDTs that associates these creatures – otherwise recognized by Nage as members of a covert category of mammals – with non-mammals (Forth 2004: 432). Previously I attributed this to the porcupine’s quills and their resemblance to the feathers of birds. As I learned from further field research conducted in 2008, however, behaviour and environmental associations may also play a part. Referring to the fact that many Nage find the application of *lalu* and *susu* to male and female porcupines very odd “because of their resemblance to dogs and pigs,” a senior man mentioned how, when he was young, his parents, responding to his puzzlement, had explained that porcupines were “creatures inside the earth,” as they reside in holes in the ground or in caves. Noteworthy here is the fact that, unlike New World porcupines (the Erethizontidae), the Sunda porcupine (*Hystrix javanica*), the species found on Flores, is strictly terrestrial and does not climb or nest in trees. According to this account, then, in their application of SDTs, Nage identify porcupines especially with reptiles and (nonflying) invertebrates, which similarly occupy holes in the ground. The interpretation additionally implicates a tripartite classification that SDTs reduce to a binary contrast. As my 2008 informant expressed it, mammals (exemplified by pigs and dogs) live “on top of the earth” and are specified with one set of SDTs. Birds and flying invertebrates are associated with the area above the earth, while reptiles and other “hole-dwellers” are below or inside the earth – as in a sense are water-dwelling creatures like fish and amphibians – and these are all identified with another set of SDTs (the pair *susu* and *lalu*). Florenese rodents occupy holes in the earth, but they also spend much time “on the earth” or in trees and, inside dwellings, in elevated places like walls, lofts, and roofs. Except cetaceans (which Nage classify

as “fish”) no Florenese mammals live mainly or exclusively in water.

How far similar considerations may explain why Chuj speakers do not specify male tapirs (evidently Baird’s tapir, *Tapirus bairdii*) with the term applied to other male mammals remains undetermined. Although the animals spend much time in or near water (and thus for some purposes could conceivably be classified with nonmammalian aquatic animals), Hopkins does not explain why Chuj speakers do not specify male tapirs with the terms employed for other male mammals. Nevertheless, the use of *mam* (father) for tapir males is obviously consistent with the specification of female tapirs as *nun* (mother), the term also applied to female goats and fish. (Ewes – female sheep – are by contrast called *p'orek*, from Spanish “borrego.”) In addition, it is a reasonable surmise that, notwithstanding their association in this context with certain non-mammals, tapirs are recognized by Chuj speakers as mammals, just as Nage regard porcupines as mammals in spite of their being distinguished sexually with SDTs otherwise reserved for non-mammals.

II

As Hopkins demonstrates, particular combinations of male and female markers in Chuj implicate smaller, less inclusive groupings of animals. These largely coincide with ethnotaxonomic contrasts at the level of the life-form taxa, and it is, therefore, noteworthy that Chuj distinguish by name life-form taxa comprising birds (*much*), snakes (*chan*), and fish (*chay*; Hopkins 1980: 14). Another point of comparative importance is the fact that Nage name precisely the same three life-forms, possessing terms for “snakes” (*nipa*), “fish” (*ika*), and “bird” (*ana wa ta'a co*, “flying animals”). A similarly remarkable resemblance between the two systems is the way both Chuj and Nage SDTs override life-form contrasts, and more particularly the several non-mammalian life-form categories explicitly recognized in the two ethnozoological nomenclatures. Although unnamed, “mammal” is a covert category implicitly accorded taxonomic status in Nage folk zoology, and Hopkins’ analysis suggests that this is the case in Chuj folk zoology as well.

Abbreviating male and female as “m” and “f,” combinations of Chuj SDTs corresponding to recognized life-form taxa comprise the following:

- 1) ‘Ajtzo’ (m) / *chichim* (f): birds. (The only exception may be an unidentified black bird with a red throat, the markers for which Hopkins recorded

- as *xip*' and '*ix* [1980: 32]. Hopkins also indicates that the female of a small bird, also unidentified, may be marked with *nun* [22]. This, however, is "probably an informant error"; moreover, Hopkins later includes the same bird in an appendix of categories that take '*ajtzo*' and *chichim* [26].
- 2) '*Ajtzo*' (m) / *nun* (f): fish.
 - 3) '*Ajtzo*' (m) / '*ix*' (f): reptiles, amphibians, and mostly flying invertebrates.
 - 4) *Xip*' (m) / '*ix*' (f): mammals and seven invertebrates. (Exceptions include mammals whose males are distinguished as *ch'a'ak*, as well as the tapir.)
(*Ch'a'ak/ix*, only deer)
(*Ch'a'ak/nun*: only goats)
 - 5) *Mam* (m) / '*ix* or *nun*' (f): The majority of invertebrates and one mammal, the tapir (*tzimin*).
 - 6) *Winak* (m) / '*ix*' (f): Just three categories of invertebrates (a scorpion, a red ant, and a tick).

As the foregoing reveals, invertebrates (in Nage all in principle distinguishable sexually as *lalu* and *susu*) tend to obscure the Chuj pattern. As Hopkins demonstrates, the coincidence of sex marking with contrasts expressed in Chuj ethnotaxonomic classification is, accordingly, more readily discernible when only vertebrate animals are considered. Four combinations of male and female markers – three with male '*ajtzo*' and the fourth with male *xip*' (numbered 1 to 4 in the list above) – can then be seen to coincide respectively with classes of vertebrate animals definable as "crawlers," "swimmers," "fliers," and "walkers" (1980: 14), which further coincide with the three Chuj named life-forms (snakes, fish, and birds) and a covert category of "mammals" (the "walkers"). More recently, Hopkins (pers. comm. 7 October 2007; Hopkins 2007) has shown how these four groupings were of significance for Mayan ritual. Both archaeological assemblages and scenes depicted in the pre-Columbian Dresden codex reveal combinations of sacrificial animals belonging to, and presumably representing synecdochally, the four classes – for example, an iguana, a fish, a turkey, and a deer (Hopkins 2007).³ In this connection, the Chuj case lends further support to a position advanced elsewhere (e.g., Forth

3 Animals identified in Thompson's analysis of Mayan hieroglyphics from the Dresden codex include: the armadillo, dog, deer, fish, frogs and toads, iguana, jaguar, macaw, peccary, the quetzal bird, rabbit, raccoon, snakes (serpents), turkey, turtle or tortoise, and vulture. Of these, animals identified as "offerings" include the deer, turkey, fish, iguana, and turtle (or tortoise) – thus a mammal, bird, fish, and two reptiles.

2004b). While conceptually and practically separate, ethnotaxonomy, and the percepts reflected in ethnotaxonomic relations, can also inform "special purpose" classifications, in this instance one relevant to religious action. Expressed another way, symbolic classification, while not to be confused with ethnotaxonomy, can and often does reflect the same perceptual factors as inform "general purpose" (Berlin 1992) folk biological classifications.

In Chuj, invertebrates are marked with four of the five male terms (the sole exception is *ch'a'ak*) and two of the three female terms (thus not *chichim*, which is applied exclusively to female birds). But despite this diversity, regularities are still discernible, and from these one can identify a logic partly comparable to what is suggested by Nage usage.

To begin with, other than two kinds of snails, invertebrates marked with '*ajtzo*' (the term also denoting male birds) comprise insects, most of which are flying insects. These comprise four categories of crickets and grasshoppers and eight other flying insects; in another two cases the creatures' mode of locomotion is not clear (since the species are not identified) while another is a wingless ground-dwelling insect which nevertheless resembles a wasp. Other flying insects are not marked with '*ajtzo*', but these are relatively few in number. They include the housefly, Blue-tailed horsefly, Honey bee, and another bee, all of which take *xip*', as well as two categories of butterflies and a wasp, the males of which are marked with the "father" term, *mam*; in the case of another two insects it is not clear whether they fly or not. Evidently, the reason why the majority of flying insects are distinguished with '*ajtzo*' is that, by virtue of their possession of wings and characteristic mode of locomotion, they resemble birds both morphologically and behaviourally. Of course, '*ajtzo*' is also used for male reptiles, amphibians, and fish – as well as snails, which as "crawlers" are arguably similar to reptiles and amphibians. Yet in view of the fact that this is the Chuj word for "rooster," it is an obvious inference that its primary referent is flying creatures, and more particularly birds. Applying to exactly the same range of non-mammalian vertebrates as does '*atzo*', the same analysis can be applied to Nage *lalu*, especially in the light of comparative evidence pointing to "cock, rooster" as the original sense of **lalung*, the Malayo-Polynesian proto-form reflected in the Nage term (Zorc 1994: 581). In both languages, therefore, it would appear that terms whose original or primary sense is "male fowl" have been extended as sex differentiables not only to male birds of all kinds but to the males of a variety of non-mammalian animals (cf. Forth

2004a: 431). Also consistent with the evident centrality of birds within the congeries of animal kinds whose males are marked with *'ajtzo'* is the exclusive pairing of this term, in reference to birds, with the female SDT *chichim*, which applies only to female birds. (Other female non-mammals, both vertebrates and invertebrates, are by contrast assigned markers that also apply to mammals.)

However, Hopkins' gloss of *'ajtzo'* as "rooster" raises a question. Since Mayans acquired domestic fowls (*Gallus gallus*) only after the Spanish conquest, in pre-Columbian times the term must have had a different reference. In some Mayan languages, *'ajtzo'* seems originally to have denoted male turkeys and ducks (specifically the Muscovy duck, *Cairina moschata*), which like the subsequently introduced fowls were both domesticated species. Hofling and Tesucún list these male birds as the referents of *'ajtzo'* (their transcription) in Itzaj Maya (1997: 136); at the same time, in their English list (881) they give "rooster" as *ajt'el*, a term for which they provide no additional gloss in their Itzaj lexicon (135). Noting that the word, which he transcribes as *ah tzo*, denotes male turkeys among Chuj as well as among other Maya-speakers, Thompson derives the term from a phrase meaning "he with a wattle" (1972: 58). If this is correct, then the word must refer (or once have referred) primarily to turkeys, and only secondarily to ducks and other birds. On the other hand, *'ajtzo'* in Chuj has evidently come to acquire "rooster" (i.e., the male of *Gallus gallus*) as its primary sense.

Questions remain as to why, especially among nonflying invertebrates, sex in Chuj is marked by such a variety of terms. As Hopkins concedes (1980: 14, 22, 39), some of this seeming variability in distinguishing sex among invertebrates may be due to informant error – in which respect it may be recalled that Hopkins' data were obtained from a single informant. Whatever the effect of this circumstance, there is a more general point that needs to be registered. It would seem probable that there are very few practical contexts in which Chuj-speakers actually need to speak of or distinguish male and female insects and other invertebrates, so the question of which terms should be employed is likely to be hypothetical. The same is equally true of Nage. Yet Nage have evidently adopted, as a generally recognized principle, the precept that sex in all non-mammalian animal kinds should be distinguished with a single pair of terms, *susu* and *lalu*.

While the issue cannot be fully resolved without further field investigation, in this context as well the primary senses of the Chuj words may provide clues to invertebrate sex markers. The male markers

for these animals comprise terms which mean "father" (*mam*) – the term applied to the vast majority of male nonflying invertebrates – as well as words meaning "man (male person)" (*winak*) and "male dog" (*xip'*). As respectively the kin term denoting the male parent and the word specifying male humans, *mam* and *winak*, it may be surmised, express a sufficiently general sense of maleness to be applied, or extended, to the males of nonhuman animals not specifiable, or less obviously specifiable, with other terms (*xip'*, *ch'a'ak*, *'ajtzo'*).⁴ The same point applies to female SDTs attached to invertebrates, namely, *'ix* and *nun*, the terms for "woman" and "mother (female parent)." Expressed another way, in reference to nonhuman animals all of these can be understood as default terms. By the same token, *ch'a'ak*, *chichim*, and even in large measure *xip'*, can be called specialized terms. This much is indicated by their primary senses. Thus, all refer to nonhuman animals (or distinctively animal features in the case of *cha'a'k*, "horn") – including in two cases specific animals (domestic fowls and dogs) – and unlike the other four Chuj terms, none denotes gender, or gendered status, in human beings. A comparison can be found in English, and more generally in European language usage, where "male" and "female" are used adjectivally in the absence of special words distinguishing animal genders (like "bull" and "cow," "cock" and "hen," and "buck" and "doe"). Anglophones thus speak, for example, of "male fish," "female pythons," and so on. Also relevant is the somewhat more specialized German usage of *Männchen* and *Weibchen*, whereby male and female animals are distinguished by terms for "man" and "woman" qualified with the diminutive suffix *-chen*, which in this case refers not to size – male crocodiles being as much *Männchen* as are male sparrows – but rather separates gendered non-humans from gendered humans.

Although not widely current, certain English usages (and especially, it seems, British usages) point to another comparison with Nage and Chuj. While

4 While such elision of the contrast of humans and nonhumans is common in SDT usage the world over, it need not reflect a general anthropomorphism in human thought regarding animals, at least not as some sort of fundamental ontological conviction. It is more simply explained by the fact that, in human experience everywhere, it is the contrast of sex in human beings that is most familiar and most salient. In English, accordingly, people unfamiliar with special SDTs (for example, "stallion" and "mare" or "ram" and "ewe") will typically resort to human terms: "male" and "female" in more sophisticated usage, but also kin terms like "mother" and "father" (or "mummy" and "daddy" in children's speech). From childhood, I can even recall phrases like "man cow" and "lady cow."

nonmammals are normally distinguished simply as “female” and “male,” in an occupationally more specialized lexicon salmon (thus a fish) and lobsters and crabs (two similar kinds of invertebrates) are sexually distinguished as “cock” and “hen” (Shorter Oxford English Dictionary). What is particularly interesting here is the fact that, as in Chuj and Nage, it is the sex differentiable terms for birds that are so employed. In addition, their application to nonbirds has, in all three cases, evidently involved an extension, as noted earlier for Nage and Chuj – and not just an extension from primary senses that specifically denote male and female avifauna but particularly the two sexes among domesticated birds. Possibly related to this is another resemblance. In all three languages, SDTs for birds are distinct from those for mammals (notwithstanding the application of bird SDTs to bats in both Nage and Chuj, and to porcupines in Nage). Moreover, as revealed by their etymologies, no SDTs appear to be specific or original to non-mammals other than birds. While the argument can only be hinted at here, these circumstances seem to lend support to Cecil Brown’s thesis (1984: 107f.) according to which named life-form taxa corresponding to “bird” tend to emerge in folk taxonomies before other life-form terms, and especially ones that include mammals, invertebrates, and many reptiles. On the other hand, since “snake” and “fish” do not differ from “bird” in this respect, this similarity among English, Nage, and Chuj SDTs suggests a precedence for “bird” not so much in connection with the development of life-form categories as in regard to a more general psychological salience.

Further supporting this point is a pattern of SDTs indicated for Rotinese, which like Nage is also a Central-Malayo-Polynesian language (Jonker 1908). In Rotinese, *mane* (male) distinguishes male members of various mammalian animals, including buffalo, horses, goats, and dogs, and also human beings (see *tou-mane*, “man, male human”). In some measure recalling Chuj SDTs, females of these same animal kinds are designated as *ina*, the term for “mother” (see, e.g., *busa-ina*, “bitch”; *ndala-ina*, “mare”). Female domestic fowls are also specified as *ina* (thus *manu-ina*, “hen”). However, male fowls are distinguished as *laluk* (or *manu-laluk*), thus with an obvious cognate of Nage *lalu*. Basically the same pattern obtains in Malay, eastern Sumbanese, and it would seem many other Malayo-Polynesian languages, although how common it may be globally has yet to be determined.⁵

⁵ Malay and also Bahasa Indonesia tend to use separate SDTs for humans (see *laki-laki* and *perempuan*) while employing

As a word meaning “man (male human),” Chuj *winak* is interesting for quite another reason. As a male animal marker, Hopkins recorded it for just three invertebrates. All three are creatures that bite, and at least two – the scorpion and a “red ant with a vicious bite” – evidently cause humans considerable pain and discomfort. It may not be too fanciful, therefore to suggest that the word meaning “man” (human male) is motivated in this context by the power – a kind of metaphorical virility – suggested by the creatures’ bite or sting. Interestingly, the third member of this class, an unspecified “tick,” the severity of whose bite is not indicated, is alternatively marked with *mam* and *nun* (like the majority of nonflying insects).⁶

Glossed by Hopkins as “male dog,” as a reference to male mammals *xip’* evidently has male canines as its focal sense. *Xip’* can thus be used alone as a reference to male dogs, as well as a modifier of “dog” (*tzi’i*). Similarly, young unbred bitches can either be called ‘*ix tzi’i*’ (female dog) or just ‘*ix*’ (Hopkins 1980: 31). (Both usages, therefore, suggest a parallel to English “bitch,” as a term specific to dogs.) At the same time, in a broader sense *xip’* specifies the males of all mammals except for deer, goats, sheep, and tapirs, and is further applied to seven invertebrates (including four flying insects noted above and three nonfliers – a chigger, a small black woolly caterpillar, and another, unidentified insect). That the term is not appropriate to male horned animals is of course consistent with the specification of these with a special term (the word for “horn”). The application of *xip’* to a few invertebrates remains unexplained. Nevertheless, its applicability to most male mammals may be ascribed to a focal or exemplary status of dogs in relation to mammals in general. In this connection, it is probably relevant that dogs were the only domestic mammals known to Mayans in pre-Columbian times. It is thus arguably the prototypical status of dogs, as the most familiar of all mammals, which explains the use of *xip’*, “male dog,” as the STD for most other mammals, domesticated and wild.

Among the three Chuj female markers, only *chichim* (chick) is not recorded for invertebrates;

another pair, *jantan* and *betina*, for animals. The exception is cocks (male domestic fowl), which can be distinguished as *jago*. In some dialects, however, *jantan* and *betina* are also applied to human males and females (see further Forth 2004a: 428, 443 note 2).

⁶ Of course, there are other biting insects, the males of which are apparently not distinguished with *winak*. Nevertheless, it would be interesting to know whether Chuj-speakers attribute painful bites or stings especially or exclusively to the males of those species where sex is marked with this term.

in fact, the term only denotes females of a single vertebrate life-form, namely “birds” (Chuj *much*). While the exclusive association of a word meaning “chick” with birds requires no comment, there is yet a question of why the word for an immature bird might further serve as the sex marker for mature females. Although Hopkins does not address this issue, two possibilities suggest themselves. The usage may reflect an obviously closer association of female birds with chicks manifest in egg-laying and parental care. Stated another way, of a gendered pair, the “chick” bird is the one that produces chicks. On the other hand, the association of females and “chicks” could reflect the fact that, in most ornithological species, only adult males acquire distinctive and usually more colourful feathers, while both female and young birds retain a similar, and typically duller, plumage. In other words, females look more like “chicks” than do males. The English reference to adult women, albeit mostly younger adult women, as “chicks” may not be an irrelevant comparison here. At the same time, in this case the term arguably evidences a more general infantilization of the female gender in Anglophone culture, further evidenced in usages, now widely considered derogatory, like “baby,” “babe,” “girl,” and “doll.”

The fact that Chuj does not always apply the same SDTs to invertebrates as to non-mammalian vertebrates might suggest that the distinction of vertebrate and invertebrate animals is a salient contrast for Chuj-speakers. However, I would speculate that, on the contrary, variation in the ways sex is marked in invertebrates in this case reflects the general insignificance of these creatures, and perhaps more particularly their reproductive and breeding habits. An exception here may be the Honey bee, which pre-Columbian Mayan apiarists kept for their honey. Unlike most flying invertebrates, but like another sort of bee and two kinds of flies, Honey bees are designated with *xip'* (male dog). It may not be coincidental, then, that just as dogs were the only domesticated mammals, bees were so to speak the only domesticated invertebrates. By the same token, female bees, like female dogs, are marked with *'ix* (woman).

III

For a large part, the Chuj male markers *xip'* and *'ajtzo* articulate a binary contrast among vertebrate animals between mammalian and non-mammalian kinds. In Nage, an even more comprehensive dual division is effected by *mosa* and *lalu* (to cite only

the male terms), so in both cases a covert (or unnamed) life-form category of mammals is thrown into relief. As demonstrated in a previous analysis (Forth 2004a: 435 f.), Nage SDTs correlate with animal categories differentially associated with lexically distinguished methods of copulation, visible versus nonvisible genitalia, live birth versus egg-laying, and the distinction of single versus multiple births. By these criteria, mammals of course are distinguished from most other animals by their prominent genitals, not to mention other secondary sexual features such as horns and mammary appendages (udders, teats), and by their practice of giving birth live – even though Nage are aware that some reptiles do so as well. How far the same perceptual contrasts play a role in Chuj SDT assignment is not known. Nevertheless, it is a reasonable surmise that they have a similar significance, and it would, therefore, be interesting to discover whether the use of the “mother” and “father” terms for certain animals, both vertebrates and invertebrates, might reflect attention to, or interest in, the reproductive habits of the species concerned.

As explained elsewhere (Forth 2004a), the contrast of “mammals” and “non-mammals” implicit in Nage SDTs is not strictly speaking taxonomic. That is to say, the SDTs do not actually name taxa, and there is no taxon of “non-mammals” subordinate to “animal” but superordinate to the life-form taxa. At the same time, both ethnotaxonomic categories and the animal groupings to which SDTs are applied are largely determined by the same criteria – features of morphology and behaviour. Nevertheless, while locomotion and morphological features relating to locomotion are important to the definition of life-form taxa, sexual and reproductive features are more important for Nage SDTs. This, of course, is hardly surprising, in view of the fact that such terms serve by definition to mark differences of sex. The available evidence gives no reason to believe that the same does not hold true for the Chuj system of SDTs.

Ethnotaxonomic categories and the groupings illuminated by SDTs may contrast in another way. As Cecil Brown (1984) has shown, languages vary in the extent to which they distinguish life-form taxa by name. Relating the differences to changes in technology and social complexity, Brown proposes an evolutionary sequence in which such terms appear, with words with the general meanings of “bird,” “snake,” and “fish” developing before others, and a special term for “mammals” usually appearing last, or at least after these other three life-form categories (Brown 1984: 24 f.). We should recall, then, that it is precisely the first three life-

forms that are named in both Chuj and Nage. Yet distinctions underlying both Nage and Chuj SDTs suggest that what is truly basic, or psychologically salient, in this case is, on the contrary, the contrast of “mammal” and “non-mammal.” Expressed another way, what appears fundamental to such systems is a recognition, realized in the application of distinctive sex markers, of a category of mammals. And in this connection, we might further recall the earlier characterization of the Nage pair *lalu* and *susu* as marking a *negative* class of animals lacking features distinctive of mammals.

This, then, implies a reversal of the order posited by Brown in regard to life-form categories. At the same time, it does not clearly contradict this order, since Brown refers to taxa, categories quite distinct from the classes implied by SDT usage. A reason for the priority given to mammals in relation to sex differentiables is not difficult to find. Mammals, especially large mammals, are both physically closer and conceptually more familiar to people who keep domesticated beasts, as to a large extent they are to members of hunting societies. Both agriculturalists and hunters also have obvious practical interests in the contrast of sex among mammals, and more particularly in such derivative matters as their breeding habits and reproductive behaviour. As discussed elsewhere (Forth 2004a), variation of this sort among mammalian kinds may account for the Nage separation of female mammals into *metu* and *dhéghu* (see Table 1). It is for the same reasons that mammals, and especially domestic animals, even though they may not often compose a lexically marked life-form taxon, are frequently the zoological kinds most focal to, or prototypical of, a more inclusive category of “animals” (regarding Nage *ana wa*, see Forth 1995: 47). Such focality is nowhere better exemplified than in many English uses of “animal,” where the term implicitly or explicitly refers exclusively or mostly to mammals and excludes, for example, birds, fish, and insects.⁷

Although they vary in the number of distinctions they make and their degree of specificity with regard to the animal kinds to which they apply, sex differentiable terms appear to constitute a language universal. By “universal,” I do not mean that they occur in absolutely every language, but simply that they are so widespread that they cannot be attributed to language relatedness or borrowing.

7 A question I cannot treat properly here concerns whether “mammal” is really a *named* life-form for the majority of English-speakers either, despite the conceptual centrality of many mammals in Anglophone culture and folk zoology (see Wierzbicka 1985: 156f.).

As Donald Brown (1991) has argued, sometimes just two cases can be sufficient to demonstrate a universal or to identify a possible universal. In themselves, the Nage and Chuj SDTs only indirectly point to possible universals relating specifically to systems of sex differentiable terms – and then mostly of a developmental or evolutionary kind (for which Cecil Brown, Brent Berlin, and others have already provided evidence in the field of folk taxonomy). Otherwise, one finds very different patterns of sex differentiables, for example, in English and other European languages and, with regard to the Nage series specifically, in other Austronesian or Malayo-Polynesian languages (such as Malay and Rotinese; see also Forth 2004a: 428, 443 note 2). What the Nage and Chuj systems do show, however, is the way in which SDTs employed by culturally unrelated speakers of very different languages can respond almost identically to universally available percepts involving morphological and behavioural similarities and differences. In this way, moreover, SDTs can attest to the psychological reality of covert categories which they do not actually name but nonetheless disclose.

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References Cited

Berlin, Brent

1992 *Ethnobiological Classification. Principles of Categorization of Plants and Animals in Traditional Societies.* Princeton: Princeton University Press.

Brown, Cecil H.

1984 *Language and Living Things. Uniformities in Folk Classification and Naming.* New Brunswick: Rutgers University Press.

Brown, Donald E.

1991 *Human Universals.* New York: McGraw-Hill.

Forth, Gregory

- 1995 Ethnozoological Classification and Classificatory Language among the Nage of Eastern Indonesia. *Journal of Ethnobiology* 15/1: 45–69.
- 2004a A “Cock” and “Bull” Story. Nage Sex Terms and Their Implications for Ethnozoological Classification. *Anthropological Linguistics* 46/4: 427–449.
- 2004b Nage Birds. Classification and Symbolism among an Eastern Indonesian People. London: Routledge. (Studies in Environmental Anthropology, 8)

Hofling, Charles A., and F. F. Tesucún

- 1997 Itzaj Maya–Spanish–English Dictionary = Diccionario Maya Itzaj–Ingles. Salt Lake City: University of Utah Press.

Hopkins, Nicholas A.

- 1980 Chuj Animal Names and Their Classification. *Journal of Mayan Linguistics* 2/1: 13–39.
- 2007 What the Gods Eat. Maya Ethnozoology and Faunal Offerings from San Bartolo to the Dresden Codex. (Paper Presented at the Chac Mool Conference, Calgary, Alberta, November 10, 2007.)

Jonker, J. C. G.

- 1908 Rottineesch–Hollandsch woordenboek. Leiden: E. J. Brill

Shorter Oxford English Dictionary

- 1987 The Shorter Oxford English Dictionary. Oxford: Clarendon Press.

Thompson, J. Eric S.

- 1972 A Commentary on the Dresden Codex. A Maya Hieroglyphic Book. Philadelphia: American Philosophical Society. (Memoirs of the American Philosophical Society, 93)

Wierzbicka, Anna

- 1985 Lexicography and Conceptual Analysis. Ann Arbor: Karoma.

Zorc, R. David Paul

- 1994 Austronesian Culture History through Reconstructed Vocabulary (An Overview). In: A. K. Pawley and M. D. Ross (eds.), *Austronesian Terminologies. Continuity and Change*; pp. 541–594. Canberra: The Australian National University. (Pacific Linguistics, Series C, 127)