NOUN CLASSIFIERS IN ETHNOBOTANICAL TERMINOLOGY OF A YANOMAMI LANGUAGE OF BRAZIL

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1. Introduction

The purpose of this paper is, first, to describe the nature and role of pronouns in the Yanomam language and how they contribute to a system of noun classification and second, to show how this system is realized in a corpus of ethnobotanical terminology. The ethnobotanical data described in this paper were collected during the period 1992-1994 in collaboration with Mr. William Milliken, an ethnobotanist, and Dr. Bruce Albert, an anthropologist. A detailed account of Yanomami plant use can be found in the forthcoming book, *Plants and the Yanomami: Ethnobotany of an Amazonian People* by Milliken, Albert, and Goodwin Gómez.

The dialect of Yanomam described in the paper is spoken in the community of *Watorikɨ*, which has about 100 inhabitants and is located near the FUNAI post of Demini in the Brazilian State of Amazonas. This dialect has been designated by Henri Ramirez (1994:25) as Yor-c (the central sub-dialect of the eastern super dialect of division Y). Ramirez considers Yanomam and Yanomamɨ to be two 'super' dialects of the same language. Of the total number of Yanomaman speakers in both Venezuela and Brazil, approximately 81% speak one of these two dialects; an estimated 56% - the majority - speak Yanomam (the western Y dialects) and 25% speak Yanomam (the eastern Y dialects) (Albert and Goodwin Gómez 1997:29). An earlier study by Ernesto Migliazza (1972) classified these two as separate languages. The remaining two Yanomaman languages, Sanɨma (S) and Yanam/Ninam (N) are spoken by 14% and 5%, respectively, of the total population. Remnants of a fourth (or fifth, using Migliazza's analysis) language may still exist in the Ajarani region, but definitive studies have yet not been made to confirm this.

2. The Noun Classification System

Noun classification in the Yanomaman languages has been described as either a numeral classifier or a verb-incorporated type system. In fact, Derbyshire and Payne admit, "The chief characteristic of most of the Amazonian classification systems discussed here is that they cannot be labeled discretely as any one type, but are a mixture of two or all three types" (1990:243). Nevertheless, one of the Yanomaman languages, Sanɨma (or Sanuma), is described by Derbyshire and Payne (1990:246) as having a modified numeral classifier system based on Donald Borgman's (1990) description of the language. They maintain that in Sanɨma, "Classifiers only occur with numerals or quantifiers in predicate adjective constructions in which the

numeral is the predicate and the classifier is part of the subject noun phrase" (Derbyshire and Payne 1990:246). Henri Ramirez, however, disputes such a classification for Yanomamɨ, stating that it "has no numeral classifiers but a very rich verb incorporated classifier system" (Ramirez 1998:1).

According to Ramirez, the classifier is not part of the noun phrase but "obligatorily incorporated into the verbal complex" (Ramirez 1998:10). He cites an example sentence in which he analyzes the classifier as inserted between a pronominal prefix and the verbal root. This same example is found in Yanomam:

(1)   ʃama ya   he   wa -re   -ma
        tapir 1SG head eat -TEL -CMPL
        'I ate a tapir's head.'

Ramirez might analyze this sentence as formed of a simple noun phrase, *ʃama* 'tapir', and a complex predicate, *ya + he+ wa-re-ma* 'I ate a head' or perhaps more accurately 'I did head-eating'. However, one could also analyze the noun phrase as a complex constituent composed of a noun and its postposed classifier with a subject pronoun inserted between them, *ʃama + ya + he*, and a predicate composed of a verb stem and its aspectual suffixes, *wa-re-ma*.

A sentence containing an object pronoun, such as *ware* 'me' in (2), provides an additional perspective on the problem. In this case the noun and its classifier are contiguous:

(2)   oru   kɨ -nɨ   ware wa -re   -ma
        snake CL -INSTR   me   eat -TEL -CMPL
        'A snake bit me.'

The object pronoun *ware* could be considered either an independent element or incorporated into the predicate. More importantly, however, is whether or not the classifier *kɨ-nɨ* should be analyzed as part of the noun phrase with the noun *oru* 'snake'.

This question - whether the classifier should be analyzed as part of the noun phrase or as part of the predicate - is important for determining, or perhaps redefining, the type of noun classification system that exists for the Yanomaman languages. This paper assumes that classifier pronouns are analyzed as components of noun phrases, and its scope will be limited to a description of these nouns and pronouns. Nevertheless, a broader investigation of the syntactic structures of the languages may have serious implications for the morphology and provide interesting findings for a future publication.

Returning to the notion of a numeral classifier system, numerals play a very minor role in the notion of quantity in Yanomam. It is, rather, a small group of classifiers, those referred to by Borgman as the "specific classifiers" (1990:145), which seem to be the mechanism for indicating the quantity and arrangement of objects and substances. The examples presented in this article clearly place Yanomam among the numeral classifier languages if, as Allan's (1977:286) original definition states, "they are so called because a classifier is obligatory in many expressions of quantity." This

seems to be the case in Yanomam. Furthermore, the classifiers in Yanomam "occur in anaphoric or deictic expressions as well as in expressions of quantity" (1977:286), another stated characteristic of numeral classifier languages.

3. Numerals

The Yanomaman languages are characterized by a paucity of numerals. Counting does not have a high priority in Yanomami culture; 'one', 'two', sometimes 'three' (which occurs in the Yanam/Ninam language), and 'many' are as specific as anyone cares to be in discussing the numbers of animals killed, or fruits eaten, or children born. The language seems to reflect the society's lack of interest or need, if you will, for further numeration. Yanomam distinguishes only two numerals, *mõri a* 'one' and *poroka(ta) e kɨpə* 'two, a pair'; both expressions include the quanta-specifying classifiers, *a* 'singular' and *kɨpə* 'dual', respectively. A third quantity 'many' or 'much' may be indicated by the quantifier *wãroho*. For example, in Yanomam the following quantifying expressions may be elicited in response to the question, "How many children do you have?"

(3)   hwei   mõri   a   kua
         DEMON NUM   CL-SG   be/have
         here/this one   is
         'Here this one (child) is.' = 'I have one child.'

(4)   hwei   porokata e   kɨpə   wei   kua
         DEMON NUM   POSS   CL-DL   DIMIN   be/have
         here/this two   small   are
         'Here these two small ones are.' = 'I have two children.'

(5)   wãroho pə   kua
         QUANT   CL-PL   be/have
         many   are
         '(There) are many.' = 'I have many children.'

The meaning of these so-called numerals, however, is relative; the semantic input of the classifiers can contribute significantly to specify the quantity. In the following example, the numeral 'one,' *mõri*, combines with the dual *kɨpə* to convey the meaning 'only two'.

(6)   mʌõri ya   kɨpə   te -ma
         NUM 1/SG   CL-DL   take -COMPLETIVE
         'I took only two.'

4. The Nature and Role of Classifier Pronouns

Nouns in the Yanomam language are usually accompanied by one or more pronouns. These pronouns fit the two criteria by which Allan (1977) originally defined classifiers. They "occur as morphemes in surface structure under specifiable conditions;

[and] ... they have meaning, in the sense that a classifier denotes some salient perceived or imputed characteristic of the entity to which an associated noun refers" (Allan 1977:285). The following question and its response illustrate the anaphoric nature of Yanomam classifiers, "a function attributed to the prototypical classifiers" (Mithun 1986:395).

(7)   tusitusi   a   kua   tha
        wound   CL-SG   be/have   INTERROG
        'Do (you) have a wound?'

(8)   awe,   a   kua
        yes   CL-SG   be/have
        'Yes, (I) have one.'

Once a topic has been introduced in Yanomam, using the full form of the nominal expression, shortened or pronominal forms are most likely to occur throughout the remaining discourse. In fact, "the anaphoric function is especially prominent in Amazonian languages, which are characterized by the scarcity of fully-identifying nominal expressions in natural discourse," as Derbyshire and Payne point out (1990:243). Even in the case of personal pronouns, Yanomam has full and shortened forms (see (a) and (b) on Table 1). The full forms are much less common during the course of normal conversation and usually signal heightened focus, emphasis, or new information. The shortened forms for the 3rd person singular, dual, and plural pronouns, *a, kɨpə* and *pə* respectively, recur throughout the pronominal system as members of the quanta-specifying classifiers.

PERSON	SINGULAR		DUAL		PLURAL	
	subject	*object*	*subject*	*object*	*subject*	*object*
1st						
(a)	kami ya	kami ware	kami yahakɨ		kami yamakɨ	
(b)	ya	ware	yahakɨ	yahakɨ	yamakɨ	amarekɨ
2nd						
(a)	kaha wa		kaha wahakɨ		kaha wamakɨ	
(b)	wa	wa	wahakɨ	wahakɨ	wamakɨ	wamakɨ
3rd						
(a)	kama	kama e	kama kɨpə		kama pə	
(b)	a	a	kɨpə	kⁿpə	-he[1]	pə

Table 1: Personal Pronouns in Yanomam.

Classifier pronouns co-occur with personal and possessive pronouns in expressions of possession and in kinship terminology. To express possession, a possessive, *ipa* 'my' or *aho* 'your (SG)', or a personal pronoun (Table 1) for 3rd person singular and

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[1]   This is a verb suffix.

1st, 2nd,and 3rd person dual and plural forms precede the noun, which is followed by its appropriate classifier. 'Your dog' would be expressed by the following phrase:

(9)   aho   hiima   a
         your   dog   CL-SG
         'Your dog.'

and 'their (PL) houses' would require two sets of quanta-specifying classifers to express pluralization of both the possessor and the possessed:

(10)   kama   pə   yano   pə
         they   CL-PL   house CL-PL
         'their houses.'

In kinship terminology, the quanta-specifying classifier *a* co-occurs with kinship terms in the 1st or 2nd person, for example, *(ipa) hwae a* 'my father' and *(aho) yauhu a* 'your parallel cousin'. In contrast, the possessive pronoun *e* co-occurs with all singular referents in the 3rd person, such as *(kama) yesi e* 'his paternal aunt/mother-in-law'. In the case of dual and plural referents, the respective quanta-specifying classifiers *kipə* and *pə* occur, for example, in the vocatives *thathee kipə* ' Two nieces!' and *thãri pə* 'Nephews!'[2]

In the case of possessive pronominal expressions, where a noun is replaced by its classifier, only the possessive and the classifier pronouns need be expressed:

(11)   *ipa a*   'mine, singular object'
(12)   *aho kipə*   'yours, two objects'
(13)   *kama e pə*   'his, plural objects'

Classifier pronouns also co-occur with demonstratives and discourse referents, such as *ihɨ a* 'That's it!' (referring to something previous in the discourse) and *hwei a* 'This one' (close to the speaker).

The classifier pronouns in Yanomam can be divided into four types (Table 2), which correspond to Borgman's (1990:144) body part, characteristic, general, and specific classifiers for Sanɨma. The first type, which has only one member *pei*, precedes the noun and functions as an inalienable possessor. The remaining classifier types occur after the noun and reflect Allan's basic categories of classification: material, shape, consistency, size, location, arrangement, and quanta (1990:297). The second type, Borgman's so-called characteristic classifiers, is the largest, most diverse group of classifiers. Appendix A lists the principal characteristic classifiers that occur in plant names. The third type of classifier, *thə*, introduces the notion of a general class or generic category. It combines with the plural classifiers, *kɨ* and *pə*, to form two additional members, *thəkɨ* and *thəpə*. The fourth type of classifier includes the five pronouns, *a, kipə, kɨkɨ, kɨ,* and, *pə,* which indicate quanta and arrangement. These quanta-specifying classifiers are present in most pronominal expressions and

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[2]   See Albert and Goodwin Gómez, Appendix 3, for a complete inventory of Yanomam kinship terminology.

may co-occur with other types of classifiers. Either alone or in combination with other types of classifiers, quanta-specifying classifiers accompany most nouns.

Pʀᴇ-Nᴏᴍɪɴᴀʟ	Pᴏsᴛ-Nᴏᴍɪɴᴀʟ			
Inalienable				Quanta-
Possessor	Characteristic	General		Specifying
pei	(See Table 3)	*thə*	*a*	'singular'
			kɨpə	'dual'
			kɨkɨ	'collective'
			kɨ	'plural'
			pə	'plural'

Table 2: Classifier Pronouns in Yanomam

4.1. The inalienable possessor

All human and animal body parts as well as other metaphorically associated parts, such as plant parts and the parts of a canoe, are inalienably possessed in Yanomam; thus, the occurrence of the inalienable possessor, or the so-called body part classifier, *pei*, is obligatory with these nouns when no other possessor is specified. Unlike the other classifiers, *pei* does not function anaphorically. Two examples are *pei aka* CL + N '(someone's) tongue' and *pei hana* CL + N '(some plant's) leaf'. The body part classifier may co-occur with specific classifiers to further quantify the noun, as in *pei mamo kɨ* POSS+ 'eye' + DL '(someone's) + eyes' and *pei u pə* POSS + 'bone' + PL '(someone's) bones.' It also occurs with generic names for plant parts, such as *pei tihi nasi kɨ* '(any) tree's roots' and *pei tihi hrikɨ* '(any) tree's trunk '.

There is a close connection between the specification of parts (body and plant) of a whole and the characteristic classifier pronouns. Among plant names certain basic parts regularly recur and are predictable for species for which they are perceptually and/or functionally significant. Consider the form *hana kɨ* 'leaves', which is composed of the characteristic classifier *hana* and the quanta-specifying classifier *kɨ*. It is the primary classifier associated with forty-four plant names, the majority of which have medicinal, magical, ornamental or technical uses involving the leaves of the plant. The form *hana kɨ* 'leaves' can optionally follow other tree and plant names, either replacing or following the principal classifiers, to refer specifically to the 'leaf' parts of those trees or plants.

4.2. Characteristic classifiers

Most nouns in Yanomam are "associated with a default classifier that highlights certain aspects of its shape, consistency, or function" (Foley 1997:233). These so-called characteristic classifiers form the second type and largest group of classifier pronouns in the system. The semantic range expressed by characteristic classifiers in Yanomam is diverse. Some classifiers clearly reflect one or more salient physical properties, such as *koko* 'round/cylindrical', *ma* 'hard', *si* 'thin and flat', and *mo* 'small and

round'; others, such as *axi*, remain obscure. The origin of some classifiers may also be traced to "relatively concrete nouns of narrow scope" (Mithun 1986:388). Possible noun origins for some of the characteristic classifiers that occur with plants are illustrated in Table 3. Occasionally, the original noun is retained in place of the classifier, as in the case of *kõanari mamo kɨ* 'seeds' of the *kʌõanari si hi* 'Pataua palm tree.'

Noun	*Translation*	*Classifier*	*Example*	*Translation*
1. hana	'leaf'	hana	ahete hana kɨ	'creeping forest herb'
2. huutihi	'tree (generic)'	hi, tihi	kai hi	'Inga tree'
3. maama	'stone'	ma	mai ma kɨ	'Assai palm fruits'
4. mamo	'eye, eyeball'	mo	pee nahe mo kɨ	'tobacco seeds'
			okoraxi mo kɨ	'Inaja palm fruits'
5. si kɨ	'skin'	si, si kɨ	tihi si	'outer tree bark'
			tɨhɨ si	'jaguar pelt'
			hwaya si kɨ	'arrow cane'
6. thoothotho	'vine (generic)'	thotho	puu thotho	'honey vine'

Table 3: Possible Origins of Some Characteristic Classifiers of Plant Names

Most nouns in Yanomam have at least one classifier pronoun associated with them. Moreover, a characteristic classifier may be followed by a specific and/or a general classifier. However, as in Burmese and Yucatec, "it is not uncommon to find a particular noun co-occurring with different classifiers to highlight different aspects of its meaning" (Foley 1997:232). Examples #1-5 on Table 4 illustrate how the use of different classifiers creates different referents, from a whole tree to a part of the tree (nuts, seeds, bark, leaves) to a product (hammock, hallucinogenic substance) made from the tree. On the other hand, totally different plants (#5, 6, and 7) may share the same noun base and be distinguished by the classifiers which accompany them, as the Yanomam plant terms #5, 6, and 7 in Table 4 illustrate.

	Noun	*Classifier(s)*	*Translation*
1a.	hawari	hi	'Brazil nut tree'
b.	hawari	kɨkɨ	'Brazil nuts'
c.	hawari	ko si	'Brazil nut casing'
2a.	hokoto	u hi	'hardwood tree'
b.	hokoto	una si	'inner bark of the tree'
c.	hokoto	una si kɨ	'hammock made from inner bark of the tree'
3a.	koratha	a	'a/the banana or plantain (generic name)'
b.	koratha	kə	'several bananas'
c.	koratha	pə	'banana plantation'
d.	koratha	kɨpə	'a pair of / two bananas'
e.	koratha	kɨkɨ	'a bunch of bananas'
f.	koratha	si	'a banana plant'
g.	koratha	si kɨ	'banana plants'
4a.	paara	hi	'(a specific) forest tree'
b.	paara	mo kɨ	'seeds of the tree'
c.	paara	a	'hallucinogenic substance made from the seeds'
5a.	puu	u kɨ	'sugar cane plant'
b.	puu	si hana kɨ	'sugar cane leaves'
c.	puu	si u	'sugar cane juice'
6.	puu	thotho	'honey vine' (unrelated to #4)
7.	puu	hana kɨ	'forest herb' (unrelated to #4 and #5)

Table 4: Different Classifiers with the Same Noun

4.3. Quanta-specifying classifiers

Not all nouns have characteristic classifiers associated with them, but most nouns may be followed by a quanta-specifying classifier. The reason for this seems to lie in the quantifying nature of these classifiers. The quanta-specifying classifiers in Yanomam are *a* 'singular', *kɨpə* 'dual', *kɨkɨ* 'collective', and *kɨ* and *pə* 'plural'. Borgman suggests that these "occur with nouns which are used in a specific sense, such as common objects, animals, heavenly bodies, and proper names" (1990:145). The use of the singular *a* and dual *kɨpə* quanta-specifying classifiers is self-evident, while the use of the collective *kɨkɨ* may require some knowledge of the environment and the natural occurrence of the rainforest fauna and flora. For example, the names for animals that are commonly found in bands, like spider monkeys *paxo kɨkɨ* or

howler monkeys *iro kɨkɨ*, often occur with the collective classifier as well as the singular and dual, depending upon the quantity of the referent. Animals such as a tapir *xama a* or a giant river otter *huru a* co-occur with the singular *a* or the plural *pə* but not with the collective *kɨkɨ*. This suggests that these animals are not normally found in bands. Likewise, fruits that grow in bunches, like peach palm fruits *raxa kɨkɨ* and bananas *kuratha kiki,* co-occur with the collective specific classifier. Fruits or seeds which have other more prominent characteristics, such as hardness or small roundness, occur with the appropriate characteristic classifiers, as in the case of *hoko ma kɨ* 'fruits of the Bacaba palm' and *paara mo kɨ* 'seeds of a tree used to make hallucinogenic snuff.'

The distinction between the plural quanta-specifying classifiers *kɨ* and *pə* is somewhat obscure for Yanomam. Borgman (1990:145) describes *kɨ* in Sanɨma as the contracted form of *kɨkɨ*, the dual specific classifier. In Yanomam, however, both *kɨ* and *pə* convey plurality. *pə* seems to be applicable to all animate beings, including humans, as well as some inanimate objects. *kɨ*, on the other hand, occurs more frequently with inanimate objects and rarely occurs with humans. Examples 3a-g in Table 4 illustrate the dilemma of distinguishing between *pə* and *kɨ* semantically. This is one of the cases where both classifiers may occur with the same noun base, but the resulting forms differ slightly in meaning.

pə occurs with nouns that commonly exist as individual units but in the plural may connote a generalized group, such as *yaro pə* 'edible game in general' and *tihɨ pə* 'jaguars in general'. According to one hypothesis suggested by B. Albert (personal communication, January 5, 1993), *kɨ* occurs with nouns which refer to inseparable elements or to a predictable or habitual number of objects or to elements forming a system, for example *pei mamo kɨ* 'someone's eyes' and *huutihi kɨ* 'trees'. This notion has some similarity with the idea of "count" versus "mass" nouns in English, where *kɨ* is associated with a limited quantity (including a pair *kipə* or a collection *kɨkɨ*) versus an unlimited or very large quantity indicated by *pə*. While English speakers may view 'trees' as made up of individuals (and, thus, a "count noun"), Yanomami speakers may distinguish between 'a few (or a limited number of) trees' when marked by *kɨ,* as in 3b on Table 4 *koratha kə* 'several bananas', and 'a plantation (or a mass, totality, or large quantity of) trees' when marked by *pə*, as in 3c *koratha pə* 'banana plantation'. By the same token, this might account for the semantic relation of *kɨ* to the 'pair' and 'collective' classifiers *kipə* and *kɨkɨ,* where it seems to occur as the base form. In any case, there seem to be several semantic components involved in the usage of these plural markers, and a simple distinction, such as animate versus inanimate or mass versus count, is not sufficient to predict the occurrence of one or the other.

4.4. General classifiers

Borgman describes the general classifier, *thə* 'singular', and its derived plurals, *thəkɨ* and *thəpə,* as classifiers which "occur with nouns which are used in a more general

sense" (1990:145*).* The distinction between the use of the quanta-specifying and the general classifiers is not always obvious; they do not correlate with definite and indefinite categories, as in English *the* and *a*. The use of the quanta-specifying singular *a* implies an individual or unit, whereas the use of *thə* does not. In the plural forms, *thəpə* and *thəkɨ,* a definite notion of a generic class or group is conveyed. Furthermore, the use of the derived plurals, *thəpə* and *thəkɨ,* must be determined to a great extent by the same factors, discussed in the preceding section, which determine the occurrences of *pə* and *kɨ.* Some nouns usually occur with *pə* in the plural while others take *kɨ.* Occasionally, either classifier is acceptable. Nevertheless, there seems to be a general tendency to associate the classifiers *thəpə* and *pə* with animate beings, like animals and humans, and *thəkɨ* and *kɨ* with inanimate objects, like plants, as illustrated by the following generic terms:

thəpə and *pə* with animate beings

ɨmɨ timə thəpə	'tree climbing animals'
urihi theri pə	'forest animals'
nə wãrĩ pə	'evil spirits'
watori kɨ theri thəpə	'inhabitants of *watori kɨ* village'
thuə thəpə	'women'
yai thəpə	'supernatural beings'
pata thəpə	'elders, ancestors'
wayi pə	'warriors'

thəkɨ and *kɨ* with inanimate objects

urihi theri thəkɨ	'wild plants'
hutu theri thəkɨ	'cultivated plants'
huutihi mo kɨ	'tree fruits'
wamo timə thəkɨ	'edible plants'
yai thəkɨ	'inedible plants'
thoo thotho kɨ	'vines'

but	*hwĩri mamo timə thəpə*	'curative forest plants and substances'
	matihi pə	'manufactured goods'

5. Classifiers in Ethnobotanical Terminology

In addition to the general statements already made in this article concerning the nature and use of classifiers in Yanomam, an examination of ethnobotanical terminology suggests that certain classifiers occur with distinct categories or groupings of plants. The categories of plants and plant parts which clearly correlate with particular classifiers include fungi, vines, tubers and rhizomes, fruits, and trees.

Of the nineteen names for edible and inedible fungi, eleven contain the classifier *amo kɨ,* which combines the characteristic classifier *amo* and the plural classifier *kɨ*. The origin of *amo* is most likely related to the body parts *amoku* 'liver' and *amo*

maxokopə 'heart'. Not unexpectedly, the 'heartwood of a tree' is called *pei tihi amo*. Furthermore, several Yanomami have suggested that the 'fleshy' consistency of the edible fungi is reminiscent of the liver of game animals. The names for fungi which do not include the characteristic classifier *amo ki* are usually either descriptive in a more directly physical way, such as *uxiuxi kiki* 'black fungal rhizomorph bundles' from *uxi* 'black' plus the collective *kiki* (= bundles), or metaphorical, such as *xama yĩmĩkaki* 'edible mushroom' (literally meaning "tapir's ears"), *haya kasiki* 'edible mushroom' (literally meaning "deer's mouth"), and riyori *wexiki* 'fungus growing on rotten wood used for medicinal purposes' (literally "Riyori spirit's pubic hairs").

Thirty-nine of the plant names that identify vines, creepers, and lianas, include the characteristic classifier *thotho*, derived from the generic term for 'vine', *thoo thotho*. This group comprises plants from twelve different botanical families and includes such different types of plants as sweet potatoes, passion fruit, gourds, and climbing epiphytes with aerial roots. The classifier *ãthe* accompanies four names for forest lianas and vines. All four of these are used for fish poisoning.

The characteristic classifier *koko* identifies manioc tubers, like *kõamirimə koko* and *naxi koko*, 'bitter manioc tubers'. It indicates that specific plant part, *koko*, a tuber, of the specific manioc plants *kõamirimə si ki* and *nasi si ki.* It also includes other round objects, *mai koko* and *warapə koko*, balls of resin derived from the forest trees *mai ko hi* and *warapə ko hi*, respectively. Thus, *koko* identifies a class of objects that include manioc tubers and balls of tree resin. Other tubers, however, belong to a different class, which is indicated by the collective classifier *kiki.*

The collective classifier *kiki* acts as the primary classifier, apparently replacing a characteristic classifier, for a category of plants possessing edible tubers (excluding manioc), like *akotarimə kiki* 'a white sweet potato' and *aria kiki* 'elephant's-ear taro', and small rhizomes used for medicinal or magical purposes. Such rhizomes include *haro kiki* 'a tall herb cultivated for its analgesic and febrifuge properties' and *tapra kiki* 'a herb cultivated for rhizomes used in magic and sorcery'. Of the seventeen names of plants with small rhizomes that include the classifier *kiki*, twelve belong to the botanical family *Cyperaceae*. Tubers and rhizomes such as these grow in clumps under the ground, which may account for the use of *kiki,* the quanta-specifying classifier that indicates a collective arrangement of objects.

In addition, the collective classifier *kiki* is one of four classifiers that categorize fruits. *kiki* identifies fruits which occur in bunches or groups, like bananas - *paiximə kiki*, papayas - *rokoari kiki,* Brazil nuts - *hawari kiki,* and certain palm fruits, including *əri kiki,* 'fruits of the tucuma palm', and *raxa kiki,* 'fruits of the highly valued peach palm'. The collective specific classifier *kiki,* is also found in the generic plant terms, *arowari kiki,* 'plants cultivated for beneficial magic,' and *hwiri kiki,* 'plants used for sorcery.'

Fruits with hard exteriors are identified by the characteristic classifier *ma ki*, derived from *maa ma* 'stone' and the quanta-specifying classifier *ki* 'PL'. These in-

clude fruits of a number of palm trees, such as *mai ma kɨ* 'Assai palm fruits' and *hoko ma kɨ* 'Bacaba palm fruits'.

Seeds and fruits that are very small or immature and round are categorized by the characteristic classifier *mo kɨ*. The generic plant part term for 'seed' is *pei mo kə* and the generic plant part term for 'tree fruit' is *huu tihi mo kɨ* or *huu hi mo kɨ*. It is clearly derived from the body part *mamo* 'eyeball' (see Table 3). A revealing example is *okorasi mokɨ* 'small, immature fruits of the Inajá palm', which contrasts with *okorasi kɨkɨ* 'mature fruit of the Inajá palm.' Another particularly important example is *yano mo kɨ,* which refers to the 'kernels' of maize, *yano mo si*, a plant no longer cultivated by most Yanomami today. Although maize has been replaced by manioc, *yano mo si* is recognized by the Yanomami as the staple food of their ancestors.

Finally, the fourth category of fruits is indicated simply by the addition of the plural classifier, *kɨ*, to the basic plant name, as *ãpũ ũ kɨ* 'the fruit of the *ãpũ ũ hi* tree', *aso asi kɨ* 'the fruit of the *aso asi hi* tree', and *heraxi kɨ* 'the fruit of the *heraxi hi* tree'. It appears to be a default classifier for fruits which neither occur collectively (*kɨkɨ*) nor have other salient characteristics, such as hard exteriors (*ma kɨ*) or small, roundness (*mo kɨ*). The plural classifier, *kɨ*, and its variants *akɨ* and *ukɨ* also occur with a number of miscellaneous forest plants, such as *manakakɨ* 'Alstroemeria sp.', *prika akɨ* 'hot peppers', as well as cultivated plants, like *puu ukɨ* 'sugar cane' and *waha akɨ* 'yams'.

The majority of tree names include the characteristic classifier *hi,* which is derived from the generic term for tree, *huu tihi*. The term used to refer to a hardwood tree is *huhi*. Of the over 500 plant names in the database, 235 trees incorporate the characteristic classifier *hi.* These includes a number of variants (see Appendix B), such as *a hi, u hi, si hi, usi hi, una hi, na hi, axi hi, ko hi,* etc.

A category comprising palm trees (20 varieties of the botanical family *Palmae*) and banana and plantain trees (9 varieties of the botanical family *Musaceae*) can be identified by the presence of the characteristic classifier *si* and its variants *asi* and *usi*. Included in this category is one of the earliest Yanomami cultivars, *yano mo si* 'maize'. The probably related, derived classifier *si kɨ* delineates a class of manioc plants (13 varieties of *Manihot esculenta*, botanical family *Euphorbiaceae*) and six varieties of grasses and arrow cane (botanical family *Gramineae)*. The important characteristic of most plants in this class is that they are cultivated, not wild.

The default singular classifier *a* occurs with twenty plant names. These include three trees, the resin of which is used to prepare hallucinogenic snuff, five forest trees used in construction, five plants from which substances for sorcery are derived, three plants with edible tubers, and two types of bamboo used to make small flutes or drug sniffing tubes. In most of these cases, the name of the plant coincides with the name of the substance or object made from it.

6. Conclusion

An examination of the ethnobotanical terminology and the noun classification system in the Yanomam language leads to several observations concerning the language and culture of the Yanomami Indians. An understanding of what motivates the occurrence of certain noun classifiers may reflect how these people categorize and organize their world. The use of the general classifier, *thə,* organizes the natural and cultural world of the Yanomami into large, generic categories. Different classifiers may occur with the same base noun to highlight different aspects or to indicate different quantities and arrangements of the same entity. They may also indicate totally different referents, which for any number of physical, historical, or metaphorical reasons, share a similar linguistic form.

Through the use of a pre-nominal classifier, *pei*, the language can identify objects that are assumed to be inalienably part of a larger whole. This notion of body parts, parts of a whole, and their metaphorical extensions into other areas of the real world, such as canoes and plants, is well attested across cultures.

The Yanomam language can specify salient physical and functional characteristics of noun referents, such as size, hardness, shape, and use, through the presence of various characteristic classifiers. Some classifiers, such as *hi, thotho,* and *amo kɨ,* identify categories, such as 'trees', 'vines', and 'fungi/mushrooms', similar to those found in English. Others, like *kɨkɨ, ma kɨ, mokɨ,* and *kɨ,* subclassify what to an English speaker would represent a single class of 'fruits'. The interrelationship between language and culture becomes apparent through such examples, as does the contrast between different languages and cultures.

Some classifiers clearly reflect the Yanomami's tropical rainforest culture. For example, the classifier *ãthe* indicates a group of vines used for fish poisoning, a common practice among Amazonian Indians, and the classifier *koko* groups together certain round or cylindrical objects, including manioc tubers and balls of tree resin, both important commodities among Amazonian tribes. Certainly nature and culture have contributed significantly to the development and use of noun classification systems.

Sometimes plants that occur with the same classifier correlate with certain botanical families. For example, many of the plants that occur with the classifier *kɨkɨ* belong to the botanical family *Cyperaceae*, tall slender herbs with small rhizomes. Trees that occur with the classifier *si* are most likely to belong to the botanical families *Palmae* or *Musaceae*; plants that occur with *sikɨ* most probably belong to either *Euphorbiaceae* or *Gramineae.*

Despite a paucity of numerals, in comparison to a language such as English, Yanomam specifies the quantity and arrangement of noun referents primarily through the use of the noun classifiers *a, kipə, kɨkɨ, kɨ,* and *pə.* These reflect and reinforce the fact that quantity among the Yanomami ranges over a single unit, a pair, a limited quantity, or a substantial (or seemingly unlimited) quantity. The notion of plurality is further specified according to whether the referents usually (in nature) occur in a col-

lection or associated grouping, in which case the classifier *kɨkɨ* would be indicated, or not, in which case the non-collective pluralizers, *kɨ* and *pə,* would be more appropriate. It is the choice between these two classifiers, however, that highlights the difficulty in understanding subtle aspects of the Yanomam language and, consequently, the culture. The notion of plurality alone cannot account for the distinction between *kɨ* and *pə*, which the Yanomam speaker effortlessly makes.

The challenge for the linguist is to make two, often very different, worlds comprehensible to each other through their languages. The topic of noun classifiers as illustrated in ethnobotanical terminology may seem esoteric and insignificant from the perspective of an inventory of an entire language. However, two points arise from the examples presented here: (1) much information about the culture and rainforest environment of the Yanomami is revealed in the organization as well as the content of their language and (2) the language cannot be understood without an intimate knowledge of their culture and their habitat.

This ethnolinguistic study supports the claim that *Terra é Vida*, 'Land is life', for the Yanomami. Without the Amazon rainforest, they cannot survive. Their language and culture depend upon and are interwoven with the tropical rainforest that they inhabit. Their language, especially as it is revealed in noun classifiers, provides access to their intimate knowledge of the rainforest, its flora, and fauna.

APPENDIX A: THE MOST COMMON CLASSIFIERS FOR PLANT NAMES

	Classifier	Number of occurrences[3]	Example word	Translation
1.	hi	235	ahũari hi	'avocado tree'
2.	thotho	44	akanasimə thotho	'forest liana'
3.	hana kɨ	44	hɨxɨ hana kɨ	'forest shrub'
4.	si	43	raxa waka si	'peach palm'
5.	kɨkɨ	38	aria kɨkɨ	'taro plant'
6.	kɨ	34	atamə asi kɨ	'forest tree'
7.	a	28	haare a	'Virola tree'
8.	si kɨ	19	akõromə si kɨ	'tall grasses'
9.	xi kɨ	14	paari xi kɨ	'plant w/rhisomes'
10.	amo kɨ	11	ruru amo kɨ	'edible mushroom'
11.	ãthe	5	xirixiri ãthe	'Banisteriopsis vine'

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[3]   From a databank of 548 ethnobotanical names.

APPENDIX B: COMMON SECONDARY CLASSIFIERS FOR PLANT NAMES & PLANT PARTS

	Secondary CL	*CL2+CL1*	*Example*	*Translation*
1a.	a	a hi	paira a hi	'forest hardwood tree'
		a kɨ	prika a kɨ	'(hot) pepper plant'
b.	asi	asi hi	aso asi hi	'forest tree'
		asi kɨ	aso asi kɨ	'fruit of the tree'
			poyo asi kɨ	'sweet manioc plant'
c.	axi	axi	pora axi	'gourd climber'
		axi hi	hapoka axi hi	'forest tree'
d.	amo	amo	okoraxi amo	'heart of inajá palm'
		amo hi	hĩha amo hi	'forest tree'
		amo kɨ	uxirimə amo kɨ	'edible mushroom'
2a.	ko	ko si	hawari ko si	'Brazil nut casing'
		ko hi	aro ko hi	'forest tree (jatobá)'
b.	koko	koko	naxi koko	'manioc tuber'
			warapə koko	'a ball of tree resin'
c.	koxi	koxi hi	hatahato koxi hi	'forest tree'
3.	mo	mo si	yano mo si	'cultivated, maize plant'
		mo kɨ	okoraxi mo kɨ	'inajá palm fruits'
4.	na	na hi	yao na hi	'forest, hardwood tree'
5.	si	si hi	opo si hi	'forest, hardwood tree (pau santo)'
		si kɨ	yanae si kɨ	'manioc plant'
6a.	u	u hi	apũru u hi	'massive, false cedar tree'
		u kɨ	puu u kɨ	'sugar cane plant'
b.	una	una hi	poroa una hi	'cocoa (cacau) tree'
		una kɨ	yopo una kɨ	'forest plant'
c.	usi	usi hi	surua usi hi	'forest tree'
7.	xi	xi hi	nara xi hi	'annatto bush'
		xi kɨ	ara xi kɨ	'forest plant'

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Abbreviations

CL	Classifier
CMPL	Completive
DEMON	Demonstrative
DIMIN	Diminutiva
DL	Dual
INSTR	Instrumental
NUM	Numeral
QUANT	Quantifier
SG	Singular
TEL	Telic