

LINGUISTIC ASPECTS OF ETHNOBOTANICAL RESEARCH

Peter Sutton

1. LANGUAGE AS AN ESSENTIAL PART OF ETHNOBOTANY (NOT JUST A TOOL)

Ethnobotany, as I understand it, starts from three kinds of physical evidence (the choice of which, in any case, is constrained by some sorts of prior assumptions about knowledge):

the plants;

observations of plant use, non-use, selection, recognition etc.; and
records of mediation of botanical (etc.) knowledge and belief through
spoken (and sung) language, ceremony, gesture and other convention-
alised systems.

This paper discusses only one part of the evidence - records of language - and rests on rather minimal direct experience.¹

My own view is that linguistics has its primary place in a more comprehensive discipline such as anthropology. One of the practical consequences of adopting this view is that people with primarily linguistic interests may well be prepared to look on investigation of the plant domain as important to their own work and be willing to co-operate with other specialists to explore it. They do not necessarily see themselves simply as technical assistants at the level of transcriber/interpreters, in interdisciplinary work.

A sophisticated ethnobotany depends heavily on the availability of a sophisticated linguistics. It is not enough just to have that kind of linguistics available as an analytical tool. One also needs people available with a good practising knowledge of particular languages and Aboriginal regional subcultures. There are only a handful of trained linguists in Australia with the ability to discuss something like plants in an Aboriginal language at a level of real sophistication. But this is the optimum kind of semantic exploration that can lead to an analysis

linking the so-called botanical domain to all the other domains, while exposing general and specific principles of cognitive organisation. Actually, a lot of those principles can be exposed without native-like command of local languages, but it still means knowing a great deal about them and having at least some spoken command.

Languages are symbolic and pragmatic SYSTEMS, full of cross-references and multiple reverberations of meaning, so that while individual elements of two different languages may be in some sense 'translation-equivalents' (e.g. '*tree*' and *yuku*), they play non-equivalent roles in their respective semantic systems and are thus not happily transposable. By using a semantic metalanguage, one can presumably describe the different meanings of particular languages, and when 'translations' of particular words or sentences are placed against the background of such descriptions they can be understood (even though it is clear that many or most can never be commutable with their 'translation-equivalents' in radically different languages). Since cultural and grammatical descriptions are always partial, we probably have to accept the fact that all translations are at best partial.

My ideal of the way to begin an ethnobotanical study, based on a certain amount of experience in recent field work in the Cape Keerweer region, Cape York Peninsula, is to start learning the language and wait for botanical subjects to arise naturally and note what people say. At a later stage I ask what I have earlier observed to be the culturally relevant questions one can ask about plants, and also make it known that I would appreciate help in collecting and learning to recognise and name plants.

If you fail to show an increasing grasp of their language, people soon get tired of telling you things; conversely, if you show you can absorb such knowledge, they will blossom as teachers of great initiative. Aboriginal people generally show a lot of interest in plants and will discuss them freely, except perhaps where there are certain good Aboriginal reasons for not doing so. There can be a lot of enthusiasm for finding and identifying species, and an infallible memory for what species have already been collected. These tendencies can make field ethnobotany a pleasure for everyone concerned. The way these Aboriginal interests are expressed and structured is all part of the essential data. By suppressing the desire to immediately ask his own list of preconceived questions, and by patiently observing, the ethnobotanist has a good chance of getting the salient cognitive structures and processes handed to him on a plate. These observations can form the basis of future questions. I consider it axiomatic that one does not really know what are the right questions to ask until the

culture has taught you what they are. That is why it is important to know about kinship, animals and mythology (etc.), as well as plants, in order to do ethnobotany.

Sections 3-5 of this paper list questions that can be asked about the data once obtained, so in that sense they suggest subjects which could be investigated with Aboriginal instructors. However, such a list cannot be used as an 'elicitation sheet' for work in the field. Field techniques vary greatly between investigators, but I would like to make a couple of suggestions from a linguist's point of view:

Use a tape-recorder, especially in the early stages. Far too much 'information' gathered in the field actually consists solely of field workers' interpretation of the meaning of things said by Aborigines. Without some objective record of conversations, there is no check on the degeneracy of this 'information'. An objective record enables investigators to subsequently correct and refine interpretations, and also find valuable information they had not bothered to write down in the first place. Obviously the native-language materials should be tape-recorded, especially where the investigator is not trained in linguistics.

Early investigations should be as wide and unstructured (by the investigator) as possible, to allow people the freedom to structure things out for themselves. The way people select species for collection, and the order in which they deal with names, attributions, classifications, environmental associations etc. are not random; nor are their side-comments or their disputes among themselves over the proper name or classification of a specimen. My own experience with Aboriginal people shows that anything can ultimately turn out to be relevant if it is said during the discussion of a topic, no matter how much it seems to be a change of subject or a false lead.

2. PLANT NAMING, DESCRIPTION AND CLASSIFICATION AS ASPECTS OF SPEECH ACTS

The bulk of this paper deals with three subjects, names, attributions and classifications. Naming and attributing are speech acts, and a look at many plant names will immediately reveal that they are often derived from attributions and still sometimes have attributive force in addition to acting as nomenclature - so the distinction I make is a bit artificial, if useful. By 'names' I mean the tags given to all taxa, not just those on the lowest or most specific level. Thus there are specific and generic names, but actually these two only differ by degree,

since plants are always named in classes, never normally as individuals. So plant names are not names in the same sense as those of individual people or their pets. Attributions are also class-based, in a sense, as they at least contain reverberations from the class of things one has heard them used of before, and generate their own classes. Naming and attribution as speech acts reveal intersecting but distinguishable total domain classifications which may never be made explicit within a particular culture. These classifications may not always be reducible to rigid, unambiguous taxonomic (or other) arrangements.

Both particular speech acts and the speech events they comprise have structure. There is interplay between these structures and the wider cognitive domains that form the contexts of speech events (not to mention physiography of the environment etc.; but such physical realities are a further step removed again and do not come into a linguistic/cognitive discussion at this level). A sophisticated ethnobotany should appreciate the finer points of (in this case) Aboriginal botanical discourse.

Botanically-related speech acts can be divided up along subject lines, but often with difficulty, since, in real contexts, people wander from naming to describing physiology to stating plant use to discussing environmental characteristics, etc. However, we can assume that this behaviour is not random and is worth investigating. People I have worked with in eastern Cape York Peninsula have resorted to the following kinds of salient categories in both elicited and unelicited comments about plants. (Note that the order of the categories as listed here is based on my recollection of typical tendencies, and should not itself be taken too seriously.)

2.1. NOMENCLATURE

Name/alternate names/got no name/no special name, just an X/big name, small name/that's a tree/shrub/vine/grass/weed/epiphyte/seaweed/fungus etc.

2.2. EDIBILITY

We eat it (best food/good food/hard-time food/rubbish food)/only kids eat it/too small/only for big people/old people used to eat/no good/poisonous/not allowed to eat it/(+/- only) pigs/emus/possums, etc. eat it. big food/little food//restricted/unrestricted. sweet/strong/bitter/cheeky/scratches your throat/makes you vomit. eat it raw/scratch it/smash it up/soak in water/cook in ashes, etc.

2.3. PHYSICAL ATTRIBUTES²

Got fruit/no fruit//got long yam/round yam. got flower (colour of flower)//bees nest in it. got prickles/wild one/pretty leaf. big tree/small tree//big-leaf variety/small-leaf variety.

2.4. NON-PHYSICAL ATTRIBUTES

That one belongs (totemically) to so-and-so (or the family designation). that one is a story-yam. strong/weak//safe/dangerous (etc.).

2.5. USE

Food (see EDIBILITY). technology (for woomeras, wet season firewood, insect repellent etc.). good medicine, rub/drink/inhale smoke from it etc. sex magic, for man/for woman. fish poison. good for blankets/beads/toys etc. no good for anything.

2.6. ENVIRONMENT AND LOCATION

Some/plenty around/here//none here/plenty at X/X proper shot with them. you find them anywhere there is an X (extra-class association). belongs inside (inland)/on littoral/scrub-edge/scarp/seafront. belongs to mainland/islands/reefs. belongs to impenetrable scrubs/thick scrubs/forest/open country. belongs to hills/steep places/flat plains/river-banks/swamps/sandrages. belongs to soft/sandy/hard/stony/wet etc. places.

2.7. INTER/INTRA-CLASS RELATIONS (see also NOMENCLATURE)

Main one/proper one/real one. only one kind/X kinds/another kind of Y/this X is a Y. X is mate for Y/those three are mates/close or distant mates³. same as X/similar to X/different from X.

2.8. SEASONALITY

You find it at turtle mating time, etc.

The above list is only partial, but still certain important facts emerge: for example, there are traditional repertoires of verbal strategy in such a domain, in addition to the normal inventive powers of the language (for example: 'X is "mate" of Y', 'it's got X', 'it's good for X', 'it belongs to X', probably rate as rough translations of such strategies). Another point is that it is important to record these locutions as accurately as possible, even though it is tempting to

translate them into one's own notebook English and to précis them down to a word or two.

So in addition to the simply referential aspects of botanical utterances there are important lessons to be learned from their formal structures (this is dealt with in more detail below), as well as from their pragmatic role in social behaviour, especially non-referential communication (for example, obscene *vs.* polite *vs.* secret/sacred names for the same plant are alternatives selected according to non-referential norms), and as elements of discourse.

3. MORPHOLOGY AND SEMANTICS OF NAMES

In this and the following two sections, I put the topics in the form of questions about recorded data. Some of these questions were suggested by my reading of Berlin, Breedlove and Raven (1974).

In the generic and specific naming of plants, what methods of compounding, reduplication, derivational affixing, metaphoric extension etc. are used? What proportion of plant-naming stems utilise these devices, and what proportion are morphologically 'unanalysable'?

Where taxa are covert, in the sense of lacking a name, what are the formal devices of grammar which reveal them (e.g. noun classes as revealed by prefixes, pronominal cross-referencing or free markers)?

What kinds of attributional choices have been made in those cases where plant names are semantically analysable or their noun class membership criteria non-arbitrary?

What do explicit definitions or analyses of plant names or their conventional attributions tell you about the relative cognitive salience of physiological characteristics, environmental associations, technological uses, socio-religious significance etc. within the botanical domain?

Is there a linguistic register other than the everyday 'unmarked' language which throws light on the semantics of plant terminology - for example, a typically hyponymous kin avoidance-register like Dyirbal's *Dyalnguy*, or an antonymous initiation register like Walbiri's *tjiliwiri*? What semantic or other principles are employed (hyponymy, antonymy, dialect-switching, etc.)?

Are plant names different in songs, ritual contexts, etc. compared with ordinary speech?

Is there a developed gestural system, and what botanical terms does it possess? Do they typically subsume large sets of spoken-language terms?

4. ATTRIBUTIONS

4.1. PHYSIOLOGICAL ATTRIBUTIONS

What are the recognised stages of growth (development of shoot, stem, flower, fruit, seed etc.), as well as of death and decay (e.g. dead but green, half-cured, cured, half-rotten, rotten)?

What are the plant part names? (In Australian languages there tend to be a set of non-metaphoric simple terms covering parts such as shoot, leaf, root, flower, burr, fork, twig, plus a set of more or less metaphorical or very general terms which can be applied in turn to any plant part where appropriate (e.g. the 'nose' of a leaf/twig/root, 'belly' of a leaf/stem/trunk).).

What attributives are used of plants, covering e.g. colour (basic terms, sub-classifiable secondary or metaphoric terms, nonce-descriptions), size, texture (bumpy, grooved, hairy, smooth, rough, loose, spiny, shrivelled, sticky, etc.) shape (long yam/round yam, etc.), taste, edibility, moisture content, smell, strength, pliancy, etc.?

4.2. NON-PHYSIOLOGICAL ATTRIBUTIONS

Are plants associated with different moieties, clans, cult lodges etc? Are there cover-terms for such associated species?

Which are the plants mentioned in or related to particular narratives, songs, rituals, etc.? Is there an overt way of describing this relationship?

Are plants described in terms of safety/danger, relative toxicity, etc. in a way that is essentially indistinguishable from their physical properties?

What kinds of environments are conventionally characterised by a reference to a plant type or class typically associated with them (e.g. rain scrubs, box ridges, mangrove swamps, mulga copses)? What does that tell you about the cognitive salience of those plants when you compare the chosen species with its relative frequency in that type of environment (e.g. which of the mangroves is selected as a cover-term for mangrove complexes)?

Which plant names occur in place-names, personal and dog names etc., and what is the explicable connection between them (if any)?

5. CLASSIFICATIONS

5.1. TAXONOMIES (*Hyponymic or Dominance Relations between Terms*)

Are there explicit terms or formal grammatical devices which provide unique beginners⁴ (i.e. such as plants/animals/human beings/abstract

entities), and what is the range of these categories (e.g. are lichens '*plants*', or outside any such categories, or ambiguous with respect to them?)?

What are the **basic life-form taxa** dominated by a unique beginner such as '*plants*' (i.e. such as trees/shrubs/vines/grasses/fungi/seaweeds/residue)? Are there **generics** (see next level below) which are not fitted into - or are ambiguous with respect to - these basic life-form taxa? What percentage of **generics** are thus unaffiliated or ambiguous?

What percentage of **generic taxa** are monotypic⁵ and what percentage polytypic? Of those that are polytypic, how many recognised (named or un-named) **specific classes** are subsumed by each?

How many and what **specific classes** are **un-named** but conventionally recognised and classified? How are they typically distinguished? Are these distinguishing criteria at all general and conventionalised in descriptions of recognised un-named specific classes?

What are the classificatory criteria implied by the structure of the taxonomy, and by the observed application of the taxonomy in different cases of recognition and classification by informants? By what linguistic means, and with how much uniformity, can people make these taxonomic criteria explicit?

Are there multiple levels of generic taxa? Which terms appear at different levels in the taxonomy in the same form but with different functions?

5.2. NON-TAXONOMIC CLASSIFICATION

The way plant names take their place in a taxonomy commonly rests on the logically prior application of classificatory criteria which normally remain implicit, at least to a degree. The criteria for the inclusion of some items in a particular taxonomic box may not be explicable (one assumes they must have been once); frequently this is because some mythico-religious association has lost its currency. On the other hand, the grammar and lexicon of attributions (and also analysable names) provide exposed criteria which generate sets of implicit paradigms for the plant domain. It should be highly interesting to compare the paradigms you can set up by sorting plants into salient attributional classes with the taxonomies set up by the sorting of plants into taxa at the various levels. Clearly, people have a range of alternate classifications of the same things which they can use when it suits them, and we should not just chase Aboriginal taxonomies because we think that sort of structure is important. A taxonomic arrangement may simply be a weak grid superimposed on a far more prominent set of classes.

It is possible, for example, to present a taxonomy which includes only single classificatory dimensions each multiply applied on some rows, while other rows consist of nodes where each classificatory dimension is uniquely applied. But whether the taxonomy is mixed, as just described, or consists purely of either uniquely or non-uniquely applied dimensions, it is still an abstraction which, in its entirety, may be of no particular importance in the culture. Maybe there is no one 'taxonomy for all seasons' for that culture. Taxa rest on the principle of minimal distinctness and the terminological (or covert) hyponymy which that implies. Entities can be minimally distinct in one context and non-minimally distinct in another. This particularly applies to the morphological, sociological and environmental dimensions, which may use quite radically different criteria for classification. Entities are not only found in different classes on different occasions, but also may be ambiguous with respect to hierarchically-related classes in the same tree, or may belong to un-segmentable gradients, or may be unaffiliated at one or more levels in a hierarchy. One of the basic human skills of manipulating the environment, it seems to me, is just this ability to manipulate the intermeshing of different classificatory and grading modes, taxonomic and otherwise. The 'syntax' of how these different related modes are manipulated is surely the most interesting aspect of ethnobotany as a cognitive domain. Native botanical competence consists of positive abilities and acts rather than static arrays of classificatory knowledge of a given universe.

It is relevant here to quote part of Hale's report (1971) on tjiliwiri, which is basically a linguistic tradition connected with advanced initiation rituals of Walbiri men, and whose basic principle is antonymy (turning ordinary language 'upside down'). (Please note that there are severe restrictions on the discussion of this knowledge (Hale 1971:472)). Wherever possible, the antonymy principle produces polar opposites (e.g. instead of 'Give me water' one says 'I am withholding fire from him'; for 'I am short', one says 'You are tall'). Lexical items whose semantic interrelationships are 'typically taxonomic' are unsuitable for generating polar opposites. Instead, "members of a given class of objects are opposed to other members of the same immediate class - a large macropod is opposed to another large macropod (kangaroo/euro), a eucalypt is opposed to another eucalypt (red gum/ghost gum), and so on. A great deal of variability can be observed in lexical domains whose structure is taxonomic, since considerable latitude is permitted in the hierarchical arrangement of oppositions within well defined classes. Accordingly, on a given occasion, a tjiliwiri speaker may oppose macropods according to habitat, leaving size and other

attributes constant insofar as it is possible to do so; on another occasion, he may oppose them on the basis of size, leaving constant the other attributes. In general, however, an effort is made to oppose entities which are minimally distinct".

As a technique for exploring the semantics of botanical lexicon, the antonymy principle appears to be very productive, at least in this case. So long as one kept it entirely as a secular game and used it in areas far from Walbiri contact, I believe this principle could be taught to people and used for ethnobotanical and other cognitive studies, without it being linked to secret ritual. Note that Dixon used a similar technique in semantic studies with the Dyirbalngan (Dixon 1968:376). It is just this kind of active manipulation of different classificatory (and grading) abilities that is most readily analysable through language, and which also is of basic anthropological interest.

N O T E S

1. I was involved in ethnobotanical work with David Harris and Jet Harris for a few days in the Flinders Islands area (Cape York Peninsula, Queensland) in 1974, and for two months with Chase, von Sturmer, Rigsby and Thompson in the Lockhart Reserve (also C.Y.P.) during the 1975-76 wet season. In both cases it was peripheral to the other field work. This paper is specifically aimed at others engaged in ethnobotanical work in the Australian Aboriginal field.
2. The distinction here between 'physical' and 'non-physical' attributes may not be relevant to a particular culture, or may have to be carefully established.
3. Note that where 'X is mate of Y', they are often minimally distinct plant species, but in some cases one is a plant while the other belongs to another life-form, is an environmental feature etc., with a close non-botanical connection to the named plant. (I am indebted to Athol Chase for this observation.)
4. Unique beginners are taxa not classified at a more inclusive level.
5. Monotypic generics subsume single recognised specific classes; polytypic generics subsume more than one.

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