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Duane G. Metzger; Gerald E. Williams

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Some Procedures and Results in the Study of Native Categories: Tzeltal "Firewood"¹

DUANE G. METZGER

University of Illinois

GERALD E. WILLIAMS

University of Rochester

0. This study represents results at one stage in an attempted development of some specifiable techniques of ethnographic investigation and description. In this paper we discuss these techniques, and, by way of an example of their use, show the manner in which they reveal relevant dimensions in terms of which firewood is differentially identified and evaluated by the persons who use it in various Maya Indian *parajes*² of the Municipio of Tenejapa in the highlands of Chiapas, Mexico.

The data which underlie an ethnography represent, or should represent, native responses to some set of conditions. It is our feeling that more attention needs to be directed to these conditions than has generally been the case, for insofar as the statements of the conditions governing native responses are present only by implication, the resulting description is replicable only in the most general sense and is thus ambiguous and open to various and personal interpretations. Among the conditions which produce native responses, and which, together with these responses, constitute one sort of data for the ethnographer, are questions put by the ethnographer to members of the population to whom the description pertains. The investigative techniques illustrated here are directed to the formulation of these conditions in the form of linguistic contexts which elicit stable responses and are thus most efficiently replicable with a minimum of ambiguity.

In the description which follows, there is illustrated the use of unit linguistic contexts which we term *frames*³ as they serve as conditions governing responses across some segment of the population under study. It needs to be emphasized here that frame and associated response constitute a descriptive unit (at some level) which rests upon classificatory differences significant to informants rather than to the investigators.

This approach to the problem of building a description presupposes some simple analytic and descriptive principles that can be subsumed under the head of "distribution." We seek to discover regularities of distribution of linguistic forms with respect to highly specific environments, that is, with respect to the question-frames with which they occur as regularly elicitable responses, and, among regularly elicitable responses, we seek to discover similarities and differences with respect to frame-sized environments. The procedures of frame-formulation and response elicitation allow us to begin from any hunch or observational point of vantage we may have, and lead, through

distributional analysis, to the establishment of categories as well as to the organizational contexts which are crucial to the definition of these categories, and in the process provide leads to other variously related foci investigatable by these or related techniques.

We work toward the formulation of frames which produce lists, either through single or reiterated employment of frames, for such lists are constituted of items which are mutually exclusive in some environment (i.e., that environment defined by the occurrence of the frame) in which all are appropriate. Thus the list constitutes a contrast set with respect to the defining environment. The organization of such sets, regularly displayed through the frames which elicit them, bear, we assume, a significant relation to the organization of informants' "knowledge" (Goodenough 1957).

Whether this assumption is warranted or not, the data offered reflect regularities which must be taken account of. These are regularities among conditions which produce regularities in informants' responses. Data of this nature, while requiring some ordering such as we have provided in this sample, is interpretation free. Whether the data concerns firewood, as in the example, or similarly established categories (of kinsmen, or of supernatural entities, etc.) as it equally might, it is data subject to re-ordering and analysis in a variety of ways depending upon the theoretical interests of the analysts. What we have hoped to show here is that data of this kind has a structure of its own, about which investigators may agree regardless of their theoretical interests and without regard either to other kinds of material they may wish to use to expand the data or to further analytic operations they may wish to perform upon it.

1. Frames are formulated in the field; initial stages in their formulation are largely like any field worker's initial procedures: observing, asking questions (many of which are irrelevant because of the alien orientation of the investigator), and listening to and making records of what people have to say about some potential focus. Of basic importance in the formulation of frames is the use of bilingual informants who assist us in formulating relevant questions in the native language, the central problem being one of finding out from informants what things there are to be asked about, what relevant things may be asked about them, and what are the significant answers to be anticipated.

The focus from which we departed in the case used here as an example was arbitrary (as in principle are all such take-off points) in being the investigator's own notion of "firewood." It was from the beginning an open question whether a similar unitary category was discoverable in Tzeltal. It appears now that Tzeltal *si?*, which we would gloss with some confidence as "firewood," does constitute a single delimitable category at some level, but, as will be seen from a careful reading of sections 1.1 ff., it is not entirely coterminous with nor precisely the same in organizational context as its "English equivalent."

The initial questions which we attempt to learn to ask may be no more

complex than, for example, the equivalent of English "What's that?," or subsequently, "What kind of a _____ is it?" "Are there other kinds of _____?" Such questions, while broadly and repeatedly useful, are primarily probes and prompts through which we attempt to lead informants to formulate questions which are adequate as frames. The primary test of the adequacy of a potential frame is that of the stability of the response or responses it elicits; the frame is required to constrain informant responses to some limited set. The ultimate shape of the frames will be of the order of "What are the names of the kinds of _____?" (see the material of 1.1. ff.), which represents our most efficient replacement to date for a series of initial, less adequate, but developing, questions, and such frames are our best formulations of the means by which our stated results can be most directly replicated or shown to be in need of improvement.

We now present a limited body of very specific data dealing with a narrow range of cultural phenomena but delimited and ordered in terms relevant to those who share that culture. That the range of the inquiry can be broadened by similar or related techniques, or that our data are in a shape that they may be carried further by other, very different, techniques should be amply apparent. This, we feel, is their relevance for ethnography generally.

1.1. In the course of the present investigation the organizational context of "firewood" in Tenejapa Tzeltal (TenTze) emerged in some degree of elaboration. This context is composed of other potential foci at various levels of organization. By way of illustration, we show first a set of frames and responses, all amenable to further pursuit, which lead to the establishment of one contrast set within which firewood appears:⁴

- | | |
|---|---|
| I. <i>b'it'ik sb'il te sb'al me't'ik hk'a'seltik ta spisil balamilal e ?ay b'ayel ta hten</i> | How are they named, the things of mother earth in all the world? ⁶ There are many of the kind. |
| Ib. <i>b'inti sb'il te sb'ab'i hten ?ay kirsánoetik</i> | What is the name of a first kind? There are people. |
| Ib. <i>b'inti sb'il te šša'tenel ?ay šanb'alametik</i> | What is the name of a second kind? There are animals. |
| Ib. <i>b'inti sb'il (ššan) te (ta) yoš'tenel ?ay te?ak'etik</i> | What is the name of (another of) a third kind? There are 'trees-and-plants.' |
| Ib. <i>b'inti sb'il (ššan) te (ta) ššantenel ma?yuk b'a? ayiš (yan ta ššantenel ?a)</i> | What is the name of (another of) a fourth kind? There are no more (of a fourth different kind). |

This last represent a class of (in this context) equivalent responses which we have come to think of as *terminal responses*, other varieties of which will be seen below. The positive limitation of membership expressed in these responses is, in this instance, borne out by the uniformity of lists so elicited across informants. That this is not always the case will be seen in some of the longer lists of succeeding sections.

TABLE 1. "THE THINGS OF MOTHER-EARTH"

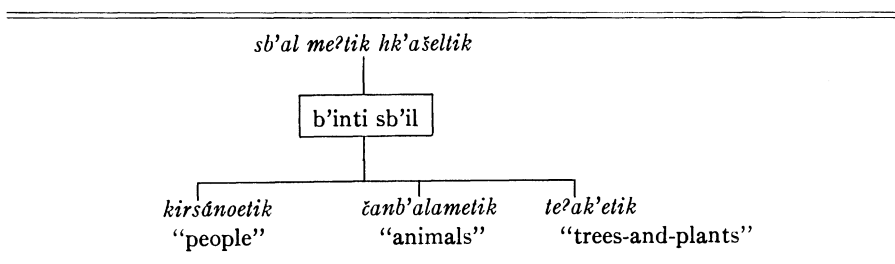
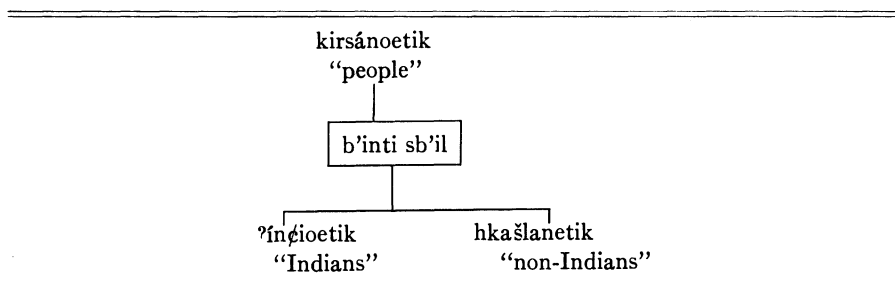


TABLE 2. "PEOPLE"

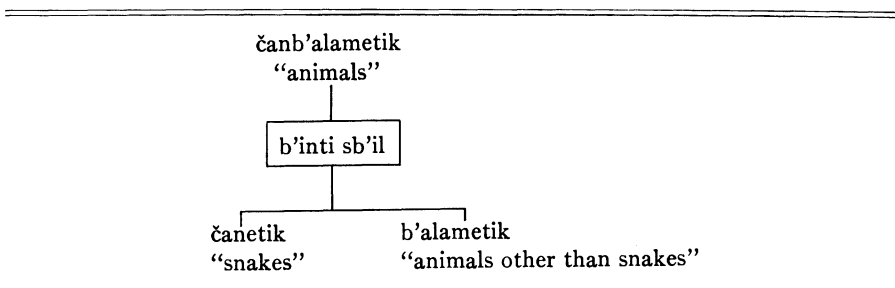


The frames and associated responses so far shown may be more briefly displayed as in Table 1 where the intervening box contains the question-word central to the frame which elicits the responses shown below it.

Each of the lowermost items of Table 1 is a potential focus. If, for example, we apply a set of frames, comparable to those which led to Table 1, to (the class) *kirsánoetik* "people", a set of responses is forthcoming which may be represented as in Table 2.⁶ The lowermost items, the responses, of Table 2 are also potential foci.

If we choose to apply comparable frames to *čanb'alametik* "animals" from Table 1, the responses of Table 3 are elicited, and these are in turn potential foci for investigation.

TABLE 3. "ANIMALS"



- 1.2. A second frame set concerns what might be termed “uses” to which at least some of the items of the Appendix are appropriately put.

TABLE 5. "HOUSE-(BUILDING) WOOD"

| Class | Sub-class | |
|-----------------------------|---------------|--|
| č'uhte ² | | "boards (<i>tabla</i>)" ⁹ |
| č'an (č'ail)te ² | | "beams (<i>tirantes</i>)" |
| sak te ² | | "roof tree(?)" |
| šul | | "ties (<i>hul</i>)" |
| | šulal pahk | "wall ties (<i>hul de pared</i>)" |
| | šulal na | "roof ties (<i>hul de techo</i>)" |
| | or | |
| | šulal ʔak | |
| k'alb'il te ² | | "strangers(?)" |
| pilal | | "posts (<i>pilares</i>)" |
| | ʔoy | "posts" |
| | č'aneb' pilal | "corner posts" |
| etc. ⁸ | | |

This response to the "use" frame IIb is one of a lengthy list of such responses (see 1.3 below). To this response, as to the others, the "class-membership" frames Ia and Ib are applicable one or more times, and produce a structured list as in Table 5.

1.3. Besides *teʔel na* "house-(building) wood," responses to the application of "use"-frame IIb to *teʔ*, "trees," produces the list of Table 6, to any of which the "class-membership" frames Ia and Ib may be applied as they were to

TABLE 6. "USES" OF TREES/WOOD

| | |
|--------------------|--|
| 1.* teʔel na | house-(building)wood |
| 2. steʔel ʔečeh | axe-handle |
| 3. steʔel bač | "pruning-fork" handle |
| 4. steʔel ʔaseróna | hoe handle |
| 5. ʔawuʔil | dibble |
| 6. luhkuč teʔ | (forked stick suspended from ceiling on which clothing, etc. is hung) |
| 7. č'amal teʔ | bench |
| . | . |
| . | . |
| . | . |
| . | . |
| 18. pam teʔ | bridge |
| 19. siʔ | firewood |
| 20. ʔak'al | charcoal |
| etc. ⁸ | |

* Numbering does not imply order. The list has been abbreviated to conserve space.

"house-(building) wood." The list of Table 6 is a contrast set of mutually exclusive "uses" to which a given piece or quantity of *te?* may be put, though the classes of trees/woods are not necessarily mutually exclusive in these "uses." Any given "use" defines some larger or smaller subset of the list in the Appendix as appropriate or most favored for that "use." Any such intersection is a potential focus (and one such is pursued in section 2 ff.).

As well as pursuing intersection of "kind" and "use," the "use" frames IIa and IIb can be applied directly to the list of Table 6, giving sets of responses concerning the "uses" of "axe-handles," etc. While these are all of potential interest, for our purposes here, we call attention to two applications of the "use" frames, to items 19. *si?* "firewood" and 20. *?ak'al* "charcoal," applications of the frame which regularly elicit a common response:

ya kak'tik ta k'ahk'

"(It serves us in that) we put it in the fire."

si? and *?ak'al* then come together in terms of "use." However, the occurrence of "charcoal" *?ak'al* in this classificatory array is not paralleled by actual use or manufacture of charcoal among the Indians of Tenejapa. Here is an instance where "knowledge" has, at present, no non-verbal correlates in behavior, and this, in turn, would appear to be correlated with a (comparative) lack of lower level differentiation within the category of charcoal (see section 3).

2.0 In this section we turn to the discussion of "firewood," of *si?*, a named category otherwise defined by the single or repeated application of the frame sets Ia-b and IIa-b, involving the intersection of two classifications, the first, loosely, by "kind" and the second by "use." In the course of so defining *si?* there has been exhibited some part of the organizational context of the category, and there have been specified the conditions to which informants responded, and to which they can be brought to respond so as to allow other investigators to (relatively) rapidly duplicate the crucial steps in our experience which lead us to our present understanding of the category.

2.1. Looking then to *si?*, "firewood," and applying to it the "class-membership" frame set Ia, Ib, there is produced a list the members of which are all identical with members of the class *te?* "trees" (cf. Appendix). The inclusion of *si?* among the "use"-classes of *te?* is borne out; the contrast in "kind" at the level of *te?* "trees" *versus* other "plants" (see Table 4) is illuminated in that within "trees" are included all varieties appropriate for "firewood." If the same "class-membership" frame set (Ia, Ib) is reapplied to the list of *si?* it produces a sub-classification paralleling the sub-classes of *te?* (see Appendix).

2.2. The lengthy list of *si?* "firewood" discussed in 2.1 is internally differentiated and orderable in terms of "evaluation," defined in terms of informants' responses to frames IIIa and IIIb, and "evaluation" in turn is directly related to the presence of certain characteristics and the absence of others in terms of which these "evaluations" are made (see 2.3).

- IIIa. *b'ahunuk lek sb'ab'i hten si? ta balamilal e* Which is a good (first) kind of firewood in the world?
te hih te? e Oak (see Appendix, items 1 ff.)
- IIIa. *b'ahunuk lek te šša?tenel* Which is a second good (one)?
č'utoh (see Appendix, item 10)

Applied across informants, IIIa as illustrated here, produces a list of "good firewoods" uniformly headed by *hih te?*, "oak(s)," the quality of which seems to be a matter of total agreement, while the inclusion or exclusion of other items in the list, items 1–18 of the Appendix, or their variable ordering suggests that, other than *hih te?*, the evaluated differences among preferred firewoods are not great enough to produce any precise uniformity of evaluation across informants. Continued application of IIIa with an informant ultimately produces a terminal response such as

pahal lekik spisiliš ?a
(te yantik sb'il si?etik e)

They are equally good, the other kinds of 'firewoods.'

One startling lack of uniformity was in regard to *tah* or *tahal te?*, "(pitch) pine," (Appendix, items 13 ff.). Informants included it among preferred fire-

TABLE 7. *si?*, INCLUSIVE AND EXCLUSIVE OF *stilib'*

| | |
|---------|----------------|
| $si?_1$ | |
| $si?_2$ | <i>stilib'</i> |

woods, but also, on other occasions, denied it was satisfactory as firewood. Subsequently elicited contrast sets revealed two sorts of relations between *si?* "firewood" and *stilib'* or *stilib'al* "kindling," for which *tahal te?* "pitch pine" is highly favored. Thus *si?_1* "firewood (for starting and maintaining fire)"¹⁰ includes *stilib'* "kindling" but *si?_2* "firewood (source of heat)" contrasts with *stilib'* "kindling (for starting fire)." One way in which these relations can be displayed schematically is shown in Table 7.

This apparent discrepancy and its resolution illustrates nicely the necessity for investigation of and controlling for the levels at which frames elicit, or responses manifest, contrasts. We found, for example, after discovering the relations of Table 7, that by preceding the application of frame IIIa to *si?* "firewood" with the application of the same frame to *stilib'* "kindling," thus inquiring after "good" varieties of kindling, its subsequent application to *si?* successfully elicited the favored varieties of firewood without *tahal te?*, and so we presume that the level of our inquiry was unambiguously pitched at the "contrasting" rather than the "including" level by the preceding, context-providing question.

Aside from *tahal te?* certain other members of the list of trees/wood of the Appendix are singled out and positively discriminated against as "poor" firewoods. These are the varieties elicited by application of frame IIIb.

| | |
|---|--|
| IIIb. <i>b'ahunuk malekuk sb'ab'i hten si? ta balamilal</i> | Which is a poor (first) kind of firewood in the world? |
| <i>k'an te?</i> | (Appendix, item 176) |
| IIIb. <i>b'ahunuk malekuk te (ta) ščantenel</i> | Which is a second poor (one)? |
| <i>bat te?</i> | (Appendix, item 228) |

Continued application of IIIb thus isolates another sub-set among the varieties of trees/woods; a set of "poor firewoods" (some of which are represented by the scattered higher-numbered entries of the Appendix).

TABLE 8. CRITERIA IN FIREWOOD EVALUATION

| <i>lek</i> "good" | <i>ma lekuk</i> "poor" |
|--|--|
| <i>tulanil te?</i> "hard wood" | <i>k'unil te?</i> "soft wood" |
| <i>tulan</i> "be hard" | <i>k'unuk'untik</i> "be (middling) soft" |
| <i>tulan ya štil</i> "burns strongly" | <i>ʔahk' ya štil</i> "burns quickly" |
| <i>tulan ya šk'ahk'</i> "burns strongly" | <i>ʔahk' ya šk'ahk'</i> "burns quickly" |
| <i>ʔahk' ya štakeh</i> "dries rapidly" | <i>k'unuk'un ya štakeh</i> "dries slowly" |
| <i>lum k'um k'uš sk'alel</i> "its fire is hot" | <i>teb' naš k'uš sk'alel</i> "its fire is only little hot" |

2.3. The grounds for the differential evaluation of "good" and "poor" firewoods are discoverable through the application of frames IVa–b, applied in sequence after IIIa–b respectively, and applied to the responses elicited by IIIa–b, i.e., the members of lists of "good" and "poor" firewoods.

| | |
|--|--------------------------------------|
| IVa. <i>b'i yu?un lek te</i> ————— <i>e</i> | Why is ————— good (as firewood)? |
| IVb. <i>b'i yu?un ma lekuk te</i> ————— <i>e</i> | Why is ————— not good (as firewood)? |

Responses to these frames exhibit non-contrastive dimensions of "hardness," "burning quality," "drying quality," and "heat." In each dimension, however, contrastive values for each variety of wood are elicited as shown in Table 8.

Not all responses to these two frames can be arrayed along the "either-or" dimensions of Table 8, because some responses to IVb (why poor) are not paralleled by contrasting responses to IVa (why good). These unparalleled responses to IVb have a characteristic form, beginning *melel ya yalik*. . . . "Because they say . . .", and specify consequences of burning certain kinds of wood in the household fire. The consequences are not exclusive to single

TABLE 9. CONSEQUENCES OF BURNING CERTAIN VARIETIES OF WOOD

| (<i>melel ya yalik</i> ————— (Because they say that —————) | <i>te me ya hcik'tik</i> ————— if we burn ————— | <i>ta k'ahk'</i>) in the fire.) |
|---|--|-------------------------------------|
| <i>te ya lahčik'tik hb'akeltik yu'un</i> | our own bones will be burned | |
| <i>te lašlah hmutik yu'un</i> | our chickens will die | |
| <i>te ya lastaotik čawah yu'un</i> | we will be seized by insanity | |
| <i>te malah ya šnič nahotik yu'un</i> | we won't have children | |
| <i>te ya lah scakot tup'tup'ik'al</i> <i>yu'un te kal hmič'antik</i> | our children will get epilepsy | |
| <i>te ya štal čan te hnatik yu'un</i> | a snake will come to our house (snakes are harbingers of illness) ¹¹ | |

varieties of wood, and more than a single consequence may follow upon the burning of a single variety. Some of these consequences are shown in Table 9.

These instances make clear that the principal criteria by which firewood is evaluated are not uniformly relevant for all classes of *te?*. Selecting one variety for illustration, *k'an te?* (Appendix, item 176) is accorded high rank among woods which are *tulan* "hard." It is in fact reported by some informants to be excellent firewood just as other *tulan te?* "hardwoods." However, for at least some of our Tenejapa informants, *k'an te?* is identified as a member of the class *bakel te?*, literally "bone-wood," the burning of which, as in Table 9, is as to "burn our own bones." At the same time, *k'an te?* is favored for corner posts in house construction because of its perceived resistance to decay. While it is perfectly "plausible" that *k'an te?* could be used both in house construction *and* as firewood, for some of our Tenejapa informants these two "uses" are mutually exclusive. Two "use"-categories intersect in *k'an te?*, one over-riding the other. The mere presence of criterial features (hardness, etc.) does not invariably imply membership in a class or sub-class to which these features are criterial ("preferred firewood"), and in at least some cases the same feature is criterial to membership in another, here "intersecting" class (a sub-class of building materials) which is accorded priority in "use," given a particular value in the dimension "hardness."

2.4. All shapes and conditions of *te?* are not equally appropriate for its use as *si?*, and one method of discriminating appropriate from inappropriate conditions is to elicit a description of the process of preparation of firewood, which can be done through the application of Frame V to *si?*.

V. *b'i yilel ya ?a?pas si?*
ta tenehapa

How is it you make
firewood in Tenejapa?

TABLE 10. LENGTHS IN 'FIREWOOD'

| | | |
|--|-----------------------------------|------------------|
| A. <i>ʔay</i> | <div>ʔolil wára^a</div> | <i>snahtikil</i> |
| B. <i>ʔay</i> | <div>huhun wára</div> | <i>snahtikil</i> |
| C. <i>ʔay</i> | <div>ʔoliluk ščeʔ wára</div> | <i>snahtikil</i> |
| <div> <div>“There is that</div> <div>one-half /one/ one and one-half</div> <div>its length”</div> </div> | | |

^a The *wára* is approximately one yard in length.

Responses are regularly phrased as a series of steps or stages, specifying unit operations in greater or lesser detail, beginning *nail* . . . “first” and proceeding with *patil* . . . “then afterward.” Considerable variation is exhibited in the point at which such descriptions begin (acquiring rights over a tree, felling a tree, lopping off branches) or end (piling, carrying, putting in the fire), but central and common to all such elicited descriptions are the two ordered steps:

- | | |
|--------------------|--------------------------|
| 1) <i>ya hšolʔ</i> | I cut (it) in lengths |
| 2) <i>ya htopʔ</i> | I split (it) the lengths |

which specify the appropriate shape and suggest inquiry concerning the appropriate dimensions, for which purposes Frames VIa–b developed.

VIa. *hič snahtikil ʔay siʔ e*

How long is firewood?

VIb. *bʔinti ʔutʔil ya hpʔistik te siʔ e*

How do we measure firewood?

Responses to VIa are either single and general (*ʔay kom naš* “It’s just short”) or supply multiple, specific, contrasting alternatives, shown in Table 10, as A, B, and C. Length A represents the normal length to which firewood is processed for sale (*čonel siʔ* “firewood for sale” contrasting with *bačʔil hkʔatin siʔ* “real wood for (our) heating”). Lengths B and C represent differences in standard lengths of axe handles, which is further reflected in the response to Frame VIb:

(*ya hpʔistik*) *ta steʔel ʔečeh*

(We measure it) in axe handles.

The outside limit on length is reported by informants to be two *wára* because of the difficulty of packing wood of greater length over the sometimes narrow trails.

An alternative to Frame VIa (“How long”) illustrates the potential ambiguity of responses to questions which, while appropriate, may allow alternative interpretations by the responding informant. This is Frame *VIc (starred to indicate its inadequacy) which, despite its ambiguity, produced information of interest on repeated application:

*VIc. *hič smuk'ul ʔay siʔ*

How big is firewood?

A frequent response was *č'inik naš* (or the equivalent *komik naš*) which, while judged appropriate by other informants, did not make overt an implicit difference exhibited by other responses to the same question, namely

A. *č'inik naš ya hšot'tik*

Short, we cut it in lengths.

B. *č'inik naš ya htop'tik*

Thin, we split it.

which reflect the difference of the two ordered steps common to all responses to Frame V ("How is it you make . . .") above. That the distinction is not merely an artifact of our glosses is made clear by the different contrast into which *č'in* (or *kom*) is entering at different stages in the preparation of firewood, these stages having formal verbal reflections in different transitive verb

TABLE 11. DIMENSIONS IN FIREWOOD

| Length: <i>snahtil</i> or <i>smuk'ul</i> ^a | | Size: <i>smuk'ul</i> ^a | |
|---|--|--------------------------------------|--|
| <i>naht</i> "long" | | <i>muk'</i> "big" | |
| <i>č'in</i> or <i>kom</i> "short" | | <i>č'in</i> or <i>kom</i> "small" | |
| -šot' "cut (lengths)" | | -top' "split" | |

* The appearance of *smuk'ul* in both cases reflects the ambiguity implicit in Frame *VIc. "Size" here may be more generally read "size other than length."

stems, -šot' and -top.' These contrasts of *č'in* and their "formal" neutralization are shown in Table 11.

Other different and formally neutralized values of *č'in* (or *kom*) "small" are exhibited in relation to *stilib'al* "kindling" (2.2 above). If *VIc (How big?) is applied to *stilib'al* just as it was to "firewood," the response may be overtly the same: *č'inik naš* (or *komik naš*) "small," but covertly different in significance since in this case the shorter answers alternate with *č'inik naš ya hšiltik* "small we sliver it" involving an appropriately different transitive verb stem -šil "to split (it) fine, to sliver (it)."

Equally in the dimension of "length," *č'in* has a different range of value depending on whether the reference is to "firewood" or "kindling." Thus if VIa (How long?) is applied to *stilib'al*, responses again may be the same, e.g., *č'inik naš*, but in this case alternating with only the shortest of metric values appropriate to *siʔ* as in Table 10 (cf. "length A"), *ʔolil wāra* (approximately half a yard).

While is it not surprising that the "meaning" of a form such as "small"

should be relative, the eliciting of such forms in stable sets which included regularly associated alternative responses through some device such as the specifiable (question-) frame, allows not only the recognition of this apparent ambiguity as culturally appropriate, but also can render explicit the values implicitly attached to such "relative" terms within culturally appropriate circumstances. The apparent ambiguity is, of course, transcultural, ambiguous for the investigator who, unlike the Tenejapa Tzeltal informant, has no clear notion of the "meaning" of "small" when applied to firewood or kindling, except as he might mistakenly extrapolate from experience in his own or another society, experience which is not necessarily relevant.

3.0 The general technique of frame formulation and its application to the gathering of replicable ethnographic data, as discussed and illustrated in the preceding sections, is not, of course, limited in its usefulness to the investigation of the Tenejapa Tzeltal. Its employment in the investigation of different cultures (and sub-cultures) produces results which are specifiably different, and a few examples of these differences are exhibited here through data elicited in the same systematic way from *ladino* ("non-Indian") speakers of Tenejapa Spanish (TenSp) and Indian speakers of Tzotzil from the neighboring municipio of Chamula (ChaTzo). Though not prosecuted in anything approaching the same degree of detail as Tenejapa Tzeltal (TenTze), and only very selectively represented here, these two additional bodies of data, like the first, are potentially expandable.

Without discussing the important theoretical question of comparability across cultures, a question which warrants a more extended discussion than is possible here, the following may bear in different ways upon the question of comparability in this instance: 1) the Spanish-speaking *ladinos* of Tenejapa, as an on-going community, have been living in close contact with the Tenejapa Tzeltal-speaking Indians for several hundred years. How long the contiguity of the Tenejapa Indians and the neighboring Tzotzil-speaking Chamula has continued is another question, but the period of time is not likely to have been shorter (TenTze and ChaTzo are dialects of closely related languages which form a single branch of the Mayan language family);¹² 2) the physical circumstances of the eliciting and the body of stimulus material (i.e., informant-gathered wood samples) were held as constant as we could feasibly make them. The point is that we are reasonably confident that the similarities and differences cited here are real similarities and differences in the identification and evaluation of the same "objective" body of material. The comparisons made suggest certain of the ways in which "knowledge" of the "same" objects may differ, even in the case of such relatively commonplace, substantial objects as pieces of firewood.

3.1. Classes of *leña*, "firewood" in TenSp, correspond as in TenTze to classes of trees. The classification of the latter, however, displays some differences in classificatory structure as well as degree of internal differentiation. That is,

TenSp informants are able to name or recognize fewer varieties, differentiate among fewer varieties,¹³ and in some instances make different allocations of class membership. Thus, for example, TenSp *roble* does not include *chiquinib* or *cantulán*¹⁴ which are both included sub-varieties (of *hih te?* or *tulan*) in the classifications of TenTze and ChaTzo (see Appendix for details, Items 1-6). While the classificatory differences make no apparent difference in evaluation as firewood (that is, all these communities are agreed that all varieties are among the best of possible firewoods) they do make a difference in the ways that informants regularly respond to questions, i.e., in the ways in which these classes of objects are talked about in these communities. Thus TenTze informants in responding to III (which asks for the names of preferred firewoods) regularly respond, as indicated earlier, with only the head-word of the class *hih te?*, and ChaTzo informants uniformly respond with the corresponding head-word *tulan*, but TenSp informants respond with lists of preferred firewoods beginning (as shown in the Appendix) with *roble*, *chiquinib*, and *cantulán*, as if these varieties contrasted with each other and other varieties at a uniform classificatory level. And for TenSp informants they apparently do.

As might be inferred from the statements above concerning the relative lack of differentiation in TenSp classification, examples of this kind just discussed are plentiful, and are displayed in some number in the complete Appendix. A classificatory difference which is correlated with a more obvious difference in behavior with respect to the things classified has already been mentioned in section 1.3 above, where TenTze "knowledge" of charcoal, *ʔak'al*, is mentioned, as unparalleled by its actual "use." If the "class-membership" frame set Ia-b is applied to *ʔak'al* (a. How many kinds? . . . and b. What is the name . . .) responses are *ten naš* "One only" and *yak'alel hih te?* "charcoal of *hih te?*" respectively.

TenSp informants, in responding to an "equivalent" (but differently arrived at) question-frame *¿Quales son los classes de carbón?* "What are the kinds of charcoal," specify *carbón de roble* (cf. the discussion above of the "correspondence" of TenTze *hih te?* and TenSp *roble*) and *carbón de ocote*, the first being used to heat the enclosed rooms of *ladino* houses in Tenejapa center, while the functionally contrasting "firewood" is specified as for cooking in the frequently semi-detached, often incompletely enclosed, kitchens. The second class of "charcoal," *carbón de ocote*, is used by metal workers in their forges.

The unitary TenTze *yak'alel hih te?* thus might be said to "correspond" to TenSp *carbón de roble* in being "employed in the house for heat" but the congruity of these "adjacent" taxonomies—unparalleled by actual use of charcoal in TenTze houses—ends here since TenSp *carbón de roble* also enters into a contrast of "kind" with *carbón de ocote*, not so used, which instead figures in a "use" complex of metal working absent among the Indians of Tenejapa.

The case of ChaTzo provides yet another somewhat different mode of

classification of what we feel reasonably sure is the "same" body of objective material. Responses to question frames which "correspond" (indeed many of the constituent morphemes exhibit "regular" phonetic correspondences to the genetically related TenTze) exhibit the differentiation of TenSp: *yak'alil toh* (TenSp *carbón de ocote*) and *yak'alil tulan* (TenSp *carbón de roble*, subject to the qualification of the previous discussion of classificatory disparity).

TenTze report all classes of *hih te?* (see Appendix, items No. 1 ff.) appropriate to the making of charcoal, though they do not engage in its manufacture. Similarly, ChaTzo, who do manufacture charcoal for sale in urban San Cristóbal las Casas and environs, report all classes of *tulan* as appropriate to its manufacture, but discriminate against one variety, *č'in tulan*, as inferior in that it crumbles badly when handled (as it must be in transport and storage as well as use). This last discrimination, against a source-class of charcoal, is not made by TenTze or TenSp. The Chamula are unique in discriminating against one variety of *toh* (TenSp *ocote*, TenTze *tah*) namely *k'uk' toh* as inappropriate for charcoal for sale to metal workers.

TenSp are most explicitly critical in their evaluation of firewood when buying it, but noticeably there is an absence of reported consequences of burning some classes of wood, as displayed in Table 9 for TenTze. Carelessness in accepting wood for use in the household will have consequences such as a great deal of smoke and lack of heat if, for example, the wood is wet or green, but there seems to be no direct connection with matters of "illness," etc., as among the TenTze.

As might be expected from their close relation to TenTze, ChaTzo do discriminate against some varieties of wood as firewood on grounds other than the qualities recognized by all three communities, but the potential consequences which inhibit use of certain varieties of wood in fires are rather more limited: eye troubles and in some cases a pox-like rash. Notably these are believed to be visited upon the user, while in TenTze (see Table 9) at least some of the consequences are suffered more generally.

4. We have hoped to illustrate in this paper something of the structured character of data obtained through procedures focussing attention not only upon informants' responses but also upon the linguistic contexts (question frames or sequences of question frames) which regularly elicit these responses. On-going eliciting and analysis of data through the procedures discussed leads to the establishment of intra-culturally defined units of description, and in the process points to the discovery of other such units and relations among them.

Perhaps equally important is that these procedures can be seen as contributing practical, feasible means for replicability in cultural description; our specification of crucial bits of our experience which lead us to believe certain things about the cultural world of the Tzeltal permits our experience to be duplicated and our description to be confirmed or modified with reasonable efficiency by anyone willing to spend a relatively short time with an informant.

We would like to emphasize that while we have employed certain conventions in presenting this description, the organization of it arises out of, and indeed is part of, the data itself. (The extra-Tzeltal comparisons provided are of interest in showing organization of the same order in different but co-existing systems, but are as essentially irrelevant to the description proper as are the investigators' own culturally derived perspectives.)

Descriptions of this kind, based on these or related eliciting procedures, founded on stable native-language verbal behavior in native-defined verbal contexts,¹⁵ and organized on the ordering inherent in the data, are of interest in themselves, and suggest possibilities of even greater interest where the scope of investigations of this kind are ample enough to provide further explicit examples of the complex ways in which various sized units within cultural systems can hang together. But aside from their inherent interest, such description can also be seen as essential spadework, laying the ground for trans-cultural investigations into a wide range of systems in which culture is a significant variable.

APPENDIX

te? 'Trees,' their Classification and Evaluation as *si?* 'Firewood'

The names of 'trees' are roughly ordered by preference for both TenTze (column 1), ChaTzo (column 3) with (Ten)Sp glosses where extant and available.

Where varieties of a given class occur, the name of the class is shown in normal position with respect to the margin of the columns, while varieties thereof are indented. Where a class name is repeated as part of the name of a variety the class name is reduced in representation to the first segmental phonemic symbol followed by a period.

Differences are indicated in the following manner: alternative names within

| TenTze | TenSp | ChaTzo |
|-----------------|------------------|--------------------------------|
| 1. hih te? | <i>roble</i> | tulan |
| 2. sak-yok h. | | č'in t. b'ik'ital h'anal t. |
| 3. k'an h. | <i>cantulán</i> | k'an t. |
| 4. k'eweš h. | | |
| 5. čikinib' | <i>chiquinib</i> | čikinib' t. |
| 6. ča?-pat h. | | hpimil pat t. |
| 7. (pata te?) | (v. 40) | muk'tik potow te? |
| 8. (kok) | (v. 115) | paterna |
| 9. čučum | | čulum, čuč te? |
| 10. č'utoh te? | | č'utuh te? |
| 11. sak-bah te? | | čelopat |
| 12. čoč-ni? te? | | čoč-ni? te? |
| 13. tahal te? | <i>ocote</i> | tohal te? |

| TenTze | | TenSp | ChaTzo |
|--------|--------------------------|---------------------------------|---------------------|
| 14. | mokoč tah | | boč toh |
| 15. | bač'il tah | | boč'i toh |
| 16. | t'ihsis tah; k'ihsis tah | <i>pinabeto</i> | k'uk' toh |
| 17. | | <i>romerillo</i> (v. 150) | (k'is tou, tem toh) |
| 18. | čik tah | | čak' toh |
| . | | | |
| . | | | |
| . | | | |
| 40. | pata te? | <i>guayaba</i> | potow te? |
| 41. | pah čak' te? | | bik'ital p. |
| 42. | pata te? | (v. 7) | muk'tik p. |
| . | | | |
| . | | | |
| . | | | |
| . | | | |
| . | | | |
| 68. | Sak-bah te? | (v. 11) | (čelopat) |
| . | | | |
| . | | | |
| . | | | |
| 112. | kok te?; škok te? | | čalon |
| 113. | čalum | <i>chalum</i> | čalon |
| 114. | č'elel | <i>caspirol</i> | č'elel |
| 115. | kok | <i>paterna</i> (v. 8) | paterna |
| . | | | |
| . | | | |
| . | | | |
| 131. | (č'ič' bat) | | č'ič' bot 'ak' |
| . | | | |
| . | | | |
| 150. | | (v. 17) | k'is toh, tem toh |
| . | | | |
| . | | | |
| . | | | |
| . | | | |
| 176. | k'an te? | | k'an te? |
| 177. | šyaš k'. | | yaš te? |
| 178. | č'iš k'. | | č'iš k'. |
| 179. | bač'il k'. | | k'an te? |
| . | | | |
| . | | | |
| . | | | |
| 228. | bat te?, bat 'ak' te? | | bot 'ak' |
| 229. | bač'il bat, batul 'ak' | <i>cajete</i> | bot 'ak' |
| 230. | č'ič' bat | <i>sangre de perro</i> (v. 131) | (č'ič' bot 'ak') |

the same dialect are shown separated by commas; dialectal differences by semi-colons; where one sub-variety is evaluated differently than others of its class, it is shown in appropriate evaluation group with numerical cross reference to its class membership.

In the rare cases in which classificatory differences exist between TenTze and ChaTzo, classificatory position is shown by position with respect to the margin (as indicated above) while (presumed) identity of referent across the two languages is shown by appearance on the same line.

Where classes or sub-varieties in one language are unknown to or unidentifiable by informants of the other, the corresponding position is left empty.

NOTES

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² The *paraje* is a territorial unit within the *municipio*. *Tenejapa* is the name given to the *municipio*, the functional administrative unit, and to the "vacant-town" which is its administrative center. The Indians of the *municipio* are speakers of Tzeltal.

³ For discussion of a different type of frame, see Metzger and Williams (1963a). The notion of constraint of informants' responses is gone into there in some detail. For the application of frames, as used here, to a very different kind of "cultural material," see Metzger and Williams (1963b).

⁴ Tenejapa Tzeltal is shown here in a normalized morphophonemic transcription. /b' p' t' ɣ' k'/ are glottalized stops and affricates. [ɣ] is an affricate, [ts], /č/ an affricate [tʃ], /h/ a class of voiceless non-syllabic vocoids. For further details, see Brent Berlin, "Esbozo de la fonología del Tzeltal de Tenejapa, Chiapas," in *Estudios de Cultura Maya*, Vol. II (1962). (Chamula Tzotzil is shown as transcribed by Juan Méndez Tsotsek, a native speaker of the language who was trained to write phonemically in the course of an extended University of Chicago project in the area.) We have inserted parentheses to indicate nondistinctive alternations in the form of questions and responses.

⁵ We have attempted to provide paraphrases rather than English "translations" or form-for-form glosses. It is hoped that these will assist the reader in perceiving the organization implicit in Tzeltal. The paraphrases presented with the same Tzeltal language forms are sometimes deliberately varied in non-significant ways to make clear that form by form meaning equivalence is not to be inferred.

⁶ Frame Ia was found useful in setting up the application of Ib to items as in Table 1: Ia *hay ten sb'il le* _____ e "How many kinds of _____ are there?"

⁷ Copies of the complete appendix are available from the authors.

⁸ We employ "etc." to indicate that we do not pretend that lists are complete.

⁹ Bilingual informants' Spanish is shown where available.

¹⁰ The somewhat fanciful glosses used here illustrate one way of thinking about the distinctions involved.

¹¹ See Metzger and Williams 1963b.

¹² McQuown 1956.

¹³ A much more differentiated classification was obtained from professional wood-cutters

doing business in San Cristóbal Las Casas. Members of the TenSp community do not engage in the business.

¹⁴ Interestingly, the names are clear borrowings from Tze or Tzo, in the latter case most likely from Tzo. But the borrowing is restricted to labels in these cases, without modification of classificatory apparatus.

¹⁵ We do not suppose, of course, that verbal discriminations reflect all shared, learned distinctions; we presume that some verbal discriminations will reflect only relatively gross size-level units (e.g., in elaborate sets of motor habits). We suppose, however, that the distinctions available to study in verbal behavior will go a long way, and that taking advantage of the "built-in segmentation" that language provides (McQuown 1954:24) will allow us to examine empirically the culture-specific relations of language and the rest of culture (cf. Hymes 1964:18-20).

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