Mazatec morphology, and more

1 Data

Mazatec is an aboriginal Mexican language spoken in the state of Oaxaca. It has a certain fame amongst field linguists because of its ‘whistle speech’—a mode of paralinguistic communication which takes advantage of the major role tonal differences play in Mazatec phonology, allowing speakers to communicate over long distances by means of whistled tunes displaying the tonal contours of sentences which can be inferred from a combination of tone and context. For those of you who might be interested in the topic, there’s a classic article, "Mazateco whistle speech" by George M. Cowan, in Language 24.280–286. The following data show a different side of Mazatec. Don’t be put off by the formidable appearance of the data; tonal contours are basically irrelevant to the morphological problem presented by this data. All you need to know, so far as that’s concerned, is that ħı̂ and ħ̄ı represent different forms of the same suffix. The theme of this problem is identifying the meaning of this suffix, but you should go further and work out the meaning of as many identifiable word-parts as you can. You don’t really have much choice about that, actually, because to understand the meaning of ħ̄ı̂ ∼ ħı̂, you need to do a complete analysis of the whole data set, which you try doing right now.

One thing you should bear in mind is that no very ingenious or subtle or abstract analysis can receive absolute confirmation on the basis of twelve data points. You’re working a little bit under field conditions, where you almost never have all the data you’d need in order to achieve 100% confidence in what you come up with as a solution. New data can disconfirm what you’ve done, but you don’t ever reach a point of complete certainty. Morphology, in this respect, is no different from any other empirical domain. You do the best you can, and try to develop an analysis which makes sense of the data.

| 1. čah’h | to forget | 2. ča | to be missing | 3. th’h’ | to remember | 4. th’h | to have | 5. th’hk’a | ‘I agree’ | 6. vth’h’ | ‘I go out from among’ |
| 7. vth’h’a | ‘I go out’ | 8. šıh’ko’a | ‘I memorize’ | 9. f’a’ | ‘I pass’ | 10. f’as’d’ | ‘I go in’ | 11. f’as’d’h’a | ‘I go in among’ | 12. f’ah’h’a | ‘I choose’ |

2 Analysis

The Mazatec data are initially confusing, because there is no obvious linkage between the various contexts in which ħı̂ ∼ ħı̅ appears. It seems at least reasonably clear (assuming that the data are representative) that there is a tonological rule V → V̄̂, so that we can take ħı̂ to be the appropriate phonological form of this suffix, with ħı̅ arising as a result of tonal phonology. But what connects the various contributions that ħı̂ seems to be making to the lexical forms it appears in?

The first two pairs of forms are deceptively straightforward-looking:

1. čah’h to forget
2. ča to be missing
3. -h’ to remember
4. th’h to have

Assume that ħı̂ contributes the meaning ‘cognitive state/activity’ to the denotation apparently denoted by the root, and the result is self-explanatory.
The next item appears to reinforce the point, as well as pointing to a new morpheme:

5. th]-h]-k]-á I agree

It’s still not clear just how to analyze the last form segmented off in (5), or what it means, but in view of (3) and (4), it certainly appears isolable.

But when we proceed to other data in the problem, it becomes evident that simply taking h] to identify some mental attitude or event can’t be the right answer, though it might be part of the right answer. Consider the next two examples:

6. vit]-h]-á I go out from among
7. vit]-á I go out

These forms reflect the separation of a first person suffix -á, which is justified by the comparison of 3. and 5. What we actually find, as we look through the forms with first person marking, is -á ~ á ~ 0 (as in 10) as a first person marker, but the alternation in shape is predictable. It can be attributed to processes of nasalization and tonal assimilation: note, in particular, that the only places where the -á variant of the suffix shows up is immediately following a nasalized stem vowel. It’s possible that what’s happening in these cases is that -á is the phonemic form, and that it’s the preceding vowel which nasalizes as a result—but this is doubtful; the vowel in 10. does not undergo nasalization, for example, even though the vowel in the following syllable is nasal. (The tonological shape of the suffix, is discussed later on.) These analytic decisions entail the reanalysis of 5. and 6. as

5’. th]-h]-k]-á I agree
6’. vit]-h]-á I go out from among

respectively. The morpheme k]- can moreover be taken to identify whatever it which distinguishes agreeing from remembering something, since it’s the only bit of form that differentiates the respective meanings of 5. and 3. It’s not exactly clear what that distinction amounts to, at this point, but the difference between 3. and 5. is at least a starting point for identifying it.

Nonetheless, it is somewhat troubling to see that in (6), h] appears to contribute nothing like the cognitive component of meaning it appears to add in every one of the other examples it has appeared in so far. We can’t simply ignore that cognitive sense, but we do have to take into account the possibility that it may only be a specialized aspect of a more abstract sense, one which takes on a mentalist kind of ‘coloration’ when attached to a root which gives it that kind of coloration, but whose more general meaning takes a different specific interpretation when attached to a form which does not support a psychological-state reading. There might be something else going on, but the odds are that the difference we can observe between what we seen in 1.–5., on the one hand, and 6.–7., on the other, reflects a more basic meaning, in some sense, than what shows up in either of these two data contexts, but which is narrowed and made more specific in each, in different directions.

Example 8, now restated in analyzed form on the basis of the suffix shapes we’ve been able to extract so far, has the form:

s?-h]-k]-á I memorize

The context in 8. seems to be one which supports the same kinds of readings as in 2. and 4. Even though we don’t have any other material involving the root, s?-, we can infer that this root, unlike vit]-, encourages a mental-oriented interpretation. In addition, this word, like 5., contains the isolable affix k]-, and with this second token of the latter now available, we have some basis for an attempt to distill its fundamental sense. The difference between remembering, as in 3., and agreeing, as in 5., seems to involve, at base, so far as
agreeing is concerned, some kind of willingness to take on a certain position or view, whereas remember could be seen as something involving the notion that in English we might call *assent*: not merely holding in the mind, but in personally supporting. And memorizing something, as opposed to merely remembering it, seems to share the critical semantic property that assent connotes, involving personal adoption of, and commitment to, whatever it is that’s being memorized (taking ownership is another way of expressing the idea). On this basis of the admittedly limited data, this interpretation seems to account for the meaning contributed by -kɔ to the forms it appears in.

But there is still the problem of the psychological denotation associated with stems based on the roots for ‘to have’ and ‘to lack’, as opposed to the very different meaning that shows up with the verb denoting ‘go out’. One might in fact speculate that the difference has to do with the difference between a verb of motion (where hị seems to orient the action with respect to a cluster of surrounding physical entities) and non-motion predicates (where hị seems to relate the predicate to an internal mental domain: missing something in the mind is forgetting, acquiring it is remembering, etc.) If this line of reasoning is correct, it might then be supposed that the unitary meaning of hị is associated with a notion of *interiority defined by surrounding elements*, and that in the context of physical motion, these elements are construed to be components of a physical domain, but otherwise, as components of a mental domain. Do we have any further evidence that can support such an interpretation?

Consider the relationship between (9) and (10). We analyze fâ?à-s?ị-à, on the basis of its first person subjecthood, as comprising a root and a first person suffix:

9. fâ?à-à *I pass*

10. fâ?à-s?ị-à *I go in*

We can assume that in 9., the tone of the final affix à becomes falling tone following a vowel with falling tone, as seems to happen in 7. as well, and that the sequence àà is subsequently shortened to à. Something similar happens in 10., where the mid-low tone on the final vowel in 10. is the result of a tonological effect associated with the deletion of the first person marker -à~à postvocically; notice that in 11., the vowel of s?ị is revealed, under neutral conditions, to be a steady mid-vowel, so it looks as if the sequence /àà/ entails a deletion of the second vowel following the ‘deformation’ of the preceding vowel’s mid tone. But what’s going on in the morphology?

The key here, I think, is that the action denoted by *pass*, while it might involve movement, is arguably not motion in the same sense of what we mean by ‘verb of motion’ is. This approach suggests that a key to the whole somewhat perplexing case of hị is the recognition of two different ‘species’ of verb roots, one of which presses the interpretation of added elements towards an idea of directed physical movement, the other of which does not.

On the other hand, s?ị in 10. seems to have the effect of forcing a specialization of the sense of 9.—which can support both cognition and motion interpretations—to indicate physical motion inward with respect to some defined interior space If our guess in the preceding paragraph is right, we might expect to find that adding hị to 9. yields a verb with cognitive content, while adding this same suffix to the stem in 10, containing the aggressively motion-oriented affix s?ị, yields a verb with a still more specialized physical content. And this is exactly what we find:

12. fâ?à-hị-à *I choose*

11. fâ?à-s?ị-hị-à *I go in among*

It therefore seems that the simplest way to handle this kind of pattern is to assume that some of the work involved in going from the combination of the pieces of the word to the word’s actual meaning has to be
carried out by certain background assumptions applying to relatively abstract glosses for morphemes such as ḡɨ. Clearly, the latter’s two separate meanings are related: an enclosed physical (‘external’) domain and an enclosed cognitive (‘internal’ domain). The former correlates with verbs of motion, the latter with a class that, so far as the data indicate, contains verbs which do not explicitly specify motion, but the common idea is that of an enclosure consisting of surrounding elements (the things, whatever they are, that one is ‘among’). One problem that the analyst may have here is that the meaning of ḡɨ referring to ‘enclosure’ does not appear to conceive of this enclosure so much as a solid confining barrier, but rather more like a boundary established by a grouping of objects that may surround one.

What is slightly unexpected is that the more specialized meaning, which seems to correspond to the idea of the specifically psychological domain, is associated with the semantically less specialized class of stems, the verbs which are neutral with respect to physical motion. In a sense, the problem is that there is an apparent mismatch of defaults: the default for predicates is that they will not be specialized (specialization being verb-of-motion type meanings), and the default for characterizations of domains is that they will not be specialized (specialization corresponding here to cognitive states). Clearly, we need more information to clarify the Mazatec picture. But on the basis of the foregoing, we can represent the Mazatec verb along the following lines:

<table>
<thead>
<tr>
<th>Root</th>
<th>(ṣʔë)</th>
<th>(ḡɨ)</th>
<th>(k elgg)</th>
<th>(ā)</th>
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</thead>
<tbody>
<tr>
<td>VOM marker</td>
<td>‘enclosed domain’</td>
<td>‘assent’</td>
<td></td>
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<tr>
<td>čā ‘be missing’</td>
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<tr>
<td>thj ‘have’</td>
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<tr>
<td>větho ‘go out’</td>
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<tr>
<td>șʔè’</td>
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<tr>
<td>fāhā ‘pass’</td>
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where the concept glossed as ‘enclosed domain’ is understood to refer to an external space as long as this is part of the context of a physical movement in some spatial direction, but where otherwise the enclosure is taken to be the internal domain of the mind/personality.