Inferential Constructions in Maricopa

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0. In Maricopa there are a number of constructions which can be used to indicate that the information presented in a sentence is an inference or judgement of the speaker. The most obvious (and common) way to show that the utterance represents the speaker’s judgement is to use the verb *alyii* 'think' as the main verb of the sentences, as in

(1) Pam-sh mii-k/mii-m 'alyii-sh
Pam-sj cry-k cry-asp l-think-prf 'I think Pam cried'

This construction is typically used in the speech of some speakers whenever they are talking about anything they cannot have direct knowledge about, particularly the emotional states or other internal conditions of other people.

Another way to indicate that the information conveyed in the sentence does not reflect direct knowledge is to use the verbal clitic -shaa. -shaa can only be used on the main verb of a sentence and can only follow the realsis or incomplete markers (it can not be cliticized after the irrealis or perfective suffixes, nor can it follow any subordinating suffix). -shaa marks that the sentence conveys a guess, inference, or judgement of the speaker.

(2) m-yuu-k-shaa
2/3-see-asp-inf 'You must have seen it, I think you saw it'

(3) hatkult-sh ii-m-shaa
coyote-sj say-asp-inf 'It must be a coyote making the noise'

When -shaa cliticizes to a verb which is marked with the incomplete aspect suffix -uum, it adds the sense that the sentence expresses the hope or expectation of the speaker. An expectation can be viewed as the speaker's opinion about an event which has not yet occurred.

(4) Allen-sh vaa-uum-shaa
Allen-sj come-inc-inf 'I expect Allen will come'

1. Beyond these morphological and syntactically complex constructions, there are three fixed sets of forms which are used to indicate that the information contained in a sentence is an inference of the speaker. In each of these constructions more information is given about the source of the inference. Two sets of inferential constructions use the existential verbs, duu 'be', wii 'do', and *ii 'say'; The other set of inferentials uses the sensory verbs, yuu 'see' and *av 'hear, taste, feel'.

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1.1 Perfect evidentials are formed by following the clause expressing the state or event inferred with an existential verb which is followed by -nyadawi.

When existential verbs occur as simple auxiliaries or in certain 'adverbial' constructions, the choice of existential verb is determined by the lexical features of the verb (i.e., intransitive and stative verbs take duu 'be'; active transitive verbs take wii 'do'; verbs of manifestation, noise-making, and communication take 'ii 'say'). The selection of existential verb in the inferential construction is not determined by the lexical features of the main verb. Instead the choice of existential verb is determined by the features of the inference. If the speaker infers that some event has occurred on the basis of the subjects appearance or his state, then the existential verb is duu-m 'be', as in

(5) 'iipaa-ny-sh 'ayuu-m ev-k duu-nyadawi man-dem-sj s.t.-asc bother-ss be-prf=inf 'That man has been working' (I could tell by his appearance.)

(6) m-mii-m m-duu-nyadawi 2-cry-m 2-be-prf=inf 'You've been crying' (I could tell by your appearance, e.g., I could see the tears.)

If the speaker makes his inference on the basis of the subjects actions, then wii-m 'do' is used, as in

(7) m-mii-m m-wii-nyadawi 2-cry-m 2-do-prf=inf 'You've been crying' (I could tell by your actions, e.g., you were blowing your nose.)

If the speaker makes his inference on the basis of the way the subject sounds, then 'ii-m 'say' is used, as in

(8) Pam-sh vesh-k 'ii-nyadawi Pam-sj run-ss say-prf=inf 'Pam has been running' (I can tell because e.g. she is panting)

(9) m-mii-m m-'ii-nyadawi 2-cry-m 2-say-prf=inf 'You've been crying' (I could tell by the way your voice sounds.)

Note in (6), (7) and (9) the lexical verb and the existential verb are prefixed to indicate overtly that they each have a second person subject. If the verb is one which participates in switch reference, then it is marked with the same subject suffix -k.

This construction is used to mean that some event or state has held which has a present effect (perfect) and which the speaker knows about not from direct observation of the event or state, but from inference on the basis of the present effect. The nature of the effect—the basis of the inference—is expressed in the choice of existential verb. The existence of some state, action, or sound implies the existence of some earlier event.
1.2 Another way to express an inferential (though not perfect in this case) is with the existential verbs and lyvii-k 'be like'. In this construction the lexical verb expressing the event is marked with the same subject suffix -k; it is followed by an invariant existential verb marked with -sh and followed by lyvii-k 'be like' which has the same subject as the lexical verb.

(10) 'tipaa-ny-sh puy-k duu-sh lyvii-k
man-dem-sj die-sh be-sh be=like-asp 'It looked like it was dead'

(11) 'ayuu m-rav-k 'i-sh m-lyvii-k
s.t. 2-sick-sj say-sh 2-be=like-asp 'You sound sick'

(12) m-tpuy-m m-wi-m duu-sh m-lyvii-k
2-kill-m 2-do-m be-sh 2-be=like-asp 'It looked like you killed him'

(13) m-tpuy-m wi-sh m-lyvii-k
2-kill-m do-sh 2-be=like-asp 'It looked like you killed him'

An inference about what is going to happen can be made using this construction. In this future inferential construction the lexical verb is marked with the incomplete suffix -um. The final verb lyvii-k 'be like' is still marked as realis since that verb expresses that the situation seems 'to be like' something else--this resemblance is realis.

(14) m-puy-uum 'i-sh m-lyvii-k
2-die-inc say-sh 2-be=like-asp 'You sound like you're going to die'

(15) m-puy-uum duu-sh m-lyvii-k
2-die-inc be-sh 2-be=like-asp 'You look like you're going to die'

The choice of existential between duu-sh 'be-sh', wii-sh 'do-sh', and 'ii-sh 'say-sh' is determined not by any features of the verb, but by the source of the information being inferred--i.e., if the information is inferred from sound (as in (11) and (14) above), then 'ii-sh is used; if the information is inferred from a state (as in (10), (12), and (15) above; the typical source of such information is interpreted as the appearance of the situation), duu-sh is used; and if the information is inferred from a transitive activity (as in (13) above), wii-sh is used. Further evidence that these existentials are not lexically selected can be found in (12) which contains both an existential auxiliary and an inferential existential (which are different from each other).

1.3 The previous two sections present inferential construction which employ the existential verbs in ways determined not by the prior verb, as in the existential auxiliary construction (mentioned in section 1.1; discussed in detail in Munro 1976a, 1976b, 1977, Gordon 1980), but by the semantics of the situation being conveyed.

In the description of the two inferential constructions above there was a suggestion about the possible development of the construction which was reanalyzed as the existential auxiliary construction. At the point when the full-fledged construction in which the existential verb
was the main verb (as postulated in Munro 1976a and b) as in

Figure 1:

the existentials were probably not distributed on the basis of the lexical features of the subordinate verb. Instead it seems more likely that at that point the existential verbs were distributed like the verbs in the inferential construction—on the basis of how the information was made manifest. The information can become known to the speaker by being a state, an action, or a sound (or other non-viewed manifestation). Typically, of course, a predication expressing a state would only be revealed to exist as a state, an activity as an action, and a noise as a sound. This typical association has become fixed as part of the auxiliarization process.

How then would the construction change from reflecting the independent semantic information to being solely determined by the lexical features of the lexical verb? Clearly there is an association between the semantics of the auxiliary and the semantics of the lexical verb. A verb expressing sound or other manifestation would make its existence known through sound. Typically, then, existential verbs would be associated with different kinds of predicates, perhaps even before the existential auxiliary construction was fully grammaticized. Certainly the copy-raising of the subject of the lexical verb to being subject of the existential verb would be part of this process of grammaticization. In the perfect inferential construction (1.1 above), the existential verb is marked as having the same subject as the lexical verb and the source of information (state, action, and sound) must come from the subject of the lexical verb. Thus, in the perfect inferential construction the subject of the lexical verb is also semantically the subject of the existential verb. In the lyvii existential inferential (section 1.2), the existential verb reflects the source of the information without necessarily having as its subject the subject of the lexical verb. Thus, one can say

(16) mar-k 'ii-sh lyvii-k
     win-ss say-sh be-like-asp 'It sounds like he won'

when the noise is the shouting of the crowd, rather than any noise emitted by the 'winner'.

In the existential auxiliary construction, the typical association of certain predicates with certain manifestation (as expressed by the existential verbs) could easily have become grammaticized, so that the selection of the existential verb is determined by the features of the lexical verb.
1.4 lyvii-k 'be like' is used in another kind of inferential to express that the speaker is making a judgement about what is happening or has happened or will happen on the basis of appearances, rather than on the basis of direct observation or of hearsay.

This inferential construction uses lyvii-k 'be like' to convey that the content of the sentence is an inference of the speaker. A kw- marked verb expresses the perceptual source of the evidence on which the judgement is based.

The usual form of the sight inferential is

(17) mat-m-var-t-k kw-i-lyvii-t-k
    ref-2-fail-emp-ss kw-see-be=like-emp-asp 'You look tired'

The lexical verb expressing the inferred event or state is always marked with the emphatic suffix -t-. This construction bears a clear resemblance to the Yuma form briefly noted in Norwood (1976:79):

Yu (18) John-ts va-yem 'im v-yaa-t kw-lyvii-t
    -SUBJ DEM-go intend DEM-go-t ?-like-t
    'It looks like John's leaving'

More conservative forms of this construction in Maricopa reveal that there is a reduced form of yuu 'see' after the kw-

(19) da-sh hwet-t-k kw-yu-lyvii-t-k
    dem-sj red-emp-ss kw-see-be=like-emp-asp 'This looks red'

Further evidence that forms like (17) have a reduced form of 'see' after the kw- is that when the source of the information is sensory other than sight (auditory, tactile, etc.), the kw- marked form is av 'hear, sense'.

(20) mat-m-var-t-k kw-'av-lyvii-t-k
    ref-2-fail-emp-ss kw-hear-be=like-emp-asp 'You sound tired'

The most conservative form of this construction still found in Maricopa has the lyvii form marked with a subject pronominal prefix which indicates that it has the same subject as the main lexical verb;

(21) 'ayuu-m-rav-t-k kw-'av-m-lyvii-t-k
    s.t.-2-hurt-emp-ss kw-hear-2-be=like-emp-asp 'You sound sick'

This form suggests that the literal meaning of this sentences is something like 'To one who hears, you are like you are sick.' Since kw- is a relative marker on subject relative clauses in Maricopa, this might not be an unreasonable source for a sentence meaning 'You sound sick.' The problem with this analysis is, however, that Maricopa lyvii-k 'be like' cannot elsewhere take a dative object, only a direct object.

This form is on its way to some degree of grammatical reduction. The 'see' verb is typically reduced from yuu to i (and rarely, if ever, stressed). The main verb lyvii is not usually person marked and is criticized to the end of the kw- marked form. In Yuma, as reported in Norwood 1976, the kw- is affixed directly to lyvii as in (18).
This construction is still segmentable in Maricopa, since nya- 'when' can be inserted before lyvii, if this construction is used in a temporal clause (as as noted above lyvii can be person-marked).

(22) Bonnie-sh 'ayuu rav-t-k kw-i-nya-lyvii-m matmchev '-aay-m
     Bonnie-sj s.t. hurt-emp-ss kw-see-when-be=like-ds medicine 1-give-asp
     'When Bonnie looked sick, I gave her the medicine'

(23) humar-sh 'ayuu rav-t-k kw-'av-nya-lyvii-m matmchev '-aay-m
     child-sj s.t. hurt-emp-ss kw-hear-when-be=like-ds medicine 1-give-asp
     'When the child sounded sick, I gave her the medicine'

Note that this construction has undergone a certain amount of grammatical simplification. The verb lyvii-k 'be like' does not have to be marked with the grammatical prefix—the lexical verb can be so marked. This indicates that lyvii is not unambiguously identified as a higher verb—instead, the kw- marked verb and the lyvii can cliticize to the lexical verb.

(24) m-iiido nym-m-uyuu-ny-sh . nya-havshuu-k-kw-yu-lyvii-m
    2-eye dem+asc-2-see+nom-dem-sj when-blue-ss kw-see-be=like-ds
    m-shhot m-lyvii-t-k
    2-good+dist 2-be=like-emp-asp
    'When your eyes look blue, you're pretty'

If the inference is about something that will happen in the future, the event is expressed with a verb marked with -ly (elsewhere used as a desiderative suffix), instead of the same subject -k:

(25) m-puy-t-ly kw-i-lyvii-t-k
    2-die-emp-des kw-see-be=like-emp-asp
    'It looks like you're dying'

(26) waly-va-m-t-ly kw-'av-lyvii-t-k
    neg-come-neg-emp-des kw-hear-be=like-emp-asp
    'It sounds like he's not coming'

1.5 This construction differs from the existential + lyvii construction discussed above. To negate the kw- marked evidential, the lexical verb must be negated:

(27) aly-hwet-m-t-k kw-yu-lyvii-t-k
    neg-red-neg-emp-ss kw-see-be=like-emp-asp
    'It doesn't look red'
    (lit. 'It looks not red')

To negate the existential marked evidential, the lyvii 'be like' is negated:

(28) 'ayuu '-rav-k duw-sh waly-'-lyvii-ma-k
    s.t. 1-hurt-ss be-sh neg-1-be=like-neg-asp
    'I don't look sick'
The existential inferential construction can also be used with an NP instead of a clause as the element which expresses what the situation resembles:

(29) mmdii 'i-sh m-lyvii-t-k
    owl say-sh 2-he=like-emp-asp 'You sound like an owl'

The major semantic difference between the two kinds of evidentials which employ lyvii seems to be the emphasis of the constructions—in the existential construction the activity and its results or other evidence is central to the construction; in the other construction the emphasis is on the sensory powers associated with the inference, thus the inferrer is central.

2. The two existential inferential constructions described above as suggested in the discussion provide information about the development of the existential auxiliary construction. As noted above, in the existential auxiliary construction the main lexical verb is followed by an existential verb which is selected on the basis of the features of the lexical verb. In the historical development proposed by Munro (1976a and b), the existential auxiliary construction is derived from a complex source in which the existential verb is the main verb as represented graphically in Figure 1. Two features of Maricopa morpho-syntact help support this analysis for the development of all the existential auxiliaries.

First it is clear on the basis of the structure of Maricopa existential auxiliary constructions and the structure of quotes (complements of 'ii 'say'), that the existential construction cannot be derived from something in which the lexical verb belonged to an object clause as in Figure 2.

Figure 2:

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       S
      / \  
 NP  V
     /    /
NP    DO/SAY
    /      \
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  /          \\  
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'Say' is used as the existential auxiliary with impersonal verbs (e.g., weather verbs). In these impersonal constructions it is apparent that whatever noise is being made is not being made by the subject (since there is none), instead it must be being made by the activity expressed by the lexical verb.

(29) uuv'aw-k 'i-m
    rain-ss say-asp 'It rained'

A second argument comes from the structure of object complement clauses of the verb 'say' in Maricopa (and in the other River and the Pai languages (Munro, to appear)). The verbs of complements of 'say' can have verbs marked with -k even if such verbs are -m verbs, which can never be marked with the same subject -k or the realis aspect -k.
(30) kyaa-m/*k mii-m/*k
    shoot-m/*ss cry-m/*k-asp 'He shot it and he cried'

-m verbs can, however, be marked with -k when they are serving as the
main verb of an object clause of the verb 'ii-m 'say' and verbs
derived from it (and that -k clearly does not indicate same subject).

(31) mii-k/mii-m 'ii-sh
    cry-k/cry-asp say-prf 'He said he cried'

If, however, an -m verb is followed by an existential auxiliary, even
if that auxiliary is 'ii-m 'say', the lexical verb cannot be marked
with -k/

(32) mii-m 'ii-sh
    cry-m say-prf 'He cried'

(32') mii-k 'ii-sh 'He cried'

Thus, the 'say' data supports Munro's claim that the existential
auxiliary construction (all of it) is derived from a structure like
that represented in Figure 1. The structure in Figure 2 might
represent an intervening stage between the initial stage as represented
in Figure 1 and the modern stage in which the existential verb belongs
to the same clause as the lexical verb.

The second piece of support for this proposed historical development
comes from the inferential constructions. The existential inferential
constructions give evidence of a stage in which the existential
verbs are not selected by the features of the lexical verb, instead
they reflect independent semantic content but in which the existential
verbs are clearly not independent main verbs.

The inferential constructions thus give us an interesting
look at a verbal structure from which or perhaps through which an
entirely grammaticized construction like the existential auxiliary
construction might have passed. They also serve to suggest the kind
of semantic function such auxiliaries might have served before the
construction became entirely grammaticized.

Footnotes

1 Most of the data presented in this paper are from Ms. Pollyanna Heath,
a resident of Los Angeles and a native speaker of Maricopa. I would
like to thank Ms. Heath for her kind and patient teaching which has
always made our work both productive and pleasant. As anyone reading
this paper can see, I was and am highly influenced by the analyses of
Pamela Munro of the development of the Yuman languages. I would
like to thank her not just for the works I cite, but for the many
productive discussions we have had and for all her help and advice.
I would also like to thank Margaret Langdon for many valuable suggestions.
The analysis and data presented in this paper are from Gordon 1980.
Maricopa is a Yuman language of the River branch, spoken on the
Gila River and Salt River Reservations near Phoenix, Arizona.
The data cited in this paper are in practical orthography:
sh = ʂ ; ch = ʨ ; ɬy = ɭj ; ny = nŋ ; d = ɭ ; h = x ; hw = xw ;
kw = ŋw ; t = ç ; Vv = Vv.
The abbreviations used in this paper are asp = realis aspect, asc = associative case, ds = different subject, dem = demonstrative, emp = emphatic suffix, inc = incomplete, inf = inferential clitic, des = desiderative, prf = perfect, prf=inf = perfect inferential, ref = reflexive, ss = same subject, s.t. = something, sj = subject, 1 = first person, 2 = second person, and 3 = third person.

As noted in section 2, the verbs of complements of 'say' can be marked with \(-k\), which does not in this case indicate same subject.
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PREFACE

The 1981 Hokan Languages Workshop met jointly for the first time with the Penutian Languages Conference. Also, there were not only linguistic papers, but also anthropological and archeological papers. These two groups of specialists on American Indian languages will meet together in the future and will also meet with anthropologists and archeologists.

Unfortunately, not everyone who presented a paper at this joint meeting was able to prepare a final version for inclusion in this volume. Also, some of the Penutians were not aware that the proceedings of the meeting would be published in this volume and had made arrangements before coming to the meeting to publish their papers elsewhere. The papers are arranged in the order that they appeared on the program at the meeting except for the Kendall paper, which was not read but sent in for the meeting.

The participants at the meeting gratefully acknowledge all the work done by Shirley Silver and her students in the Department of Anthropology at Sonoma State University, which made the conference run so smoothly and enjoyably. We especially appreciated the help of the students who ran the late-night van shuttle between the university and the motel where the airport bus stopped.

Copies of the 1977, 1978, 1979, and 1980 Hokan Languages Workshops are still available from the Department of Linguistics, Southern Illinois University, Carbondale, IL 62901. The volumes of the 1975 and 1976 workshops, which appeared in the SHU-C series, University Museum Studies, are now out of print, but copies may be obtained in microfiche or hard-bound volumes from ERIC Clearinghouse on Languages and Linguistics, Center for Applied Linguistics, 3520 Prospect St., NW, Washington, DC 20007.

James E. Redden
Carbondale, April 1982
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