

Number in Hopi¹

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Number is marked in most Hopi constituent types — in some affixes and postpositions, as well as in the traditional parts of speech. Number is also marked by every process in the language, by affixation, reduplication and suppletion.

Number-marking in Hopi involves the intersection of grammatical regularity and idiosyncratic irregularity. Rules of the grammar can be specified for the regularities of number-marking and number agreement, e. g., that all inanimate nouns are marked for plural in a particular way, that for certain derived noun or verb forms other particular plural formations will be selected, that plural verbs occur with plural subjects, that demonstratives and nominalized verbal modifiers of nouns are of the same number as the modified noun, and so on. Rules cannot be specified, however, for the plural formation of most noun or verb stems; hence, most plural forms must be given in the lexicon, as idiosyncratic.

1. Hopi nouns are not inflectionally marked for singular; the uninflected noun stem is singular. Dual is marked syntactically for subject nouns; subject and non-subject nouns may also be inflectionally marked as dual by the addition of a single suffix.² Plural of nouns, however, is marked in a variety of ways with

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1. This paper is dedicated to Yuen Ren Chao in memory of his ever lively interest in the details of how different languages and their speakers worked.
 2. The form of the dual noun suffix and the extent of its application vary with different dialects. Third Mesa speakers use the dual suffix *-tʰi* on animate nouns only; see Kalectaca (1978) for the wider use of dual on Second Mesa.

Dual is always marked for subjects. If the noun or pronoun subject lacks a dual form (and all pronouns do), the plural form of the noun or pronoun is used as dual; hence, "non-singular" is a more appropriate label for such forms. No verbs mark dual overtly; non-singular subject noun forms (whether marked for dual or not) co-occur with singular verb forms to mark dual; hence, such singular verb forms might be more appropriately labelled "non-plural." (See Masayesva Jeanne 1978 for a detailed rationalization.) Compare the following examples, in which a question (Q) is followed by two possible answers (A1 and A2).

Q. *ya ʔim pitʰi* 'Have you arrived?'

A1. *ʔitam pitʰi* 'We two have arrived'.

A2. *ʔitam ʔöki* 'We plural have arrived'.

Q includes the singular pronoun *ʔim* and the non-plural verb *pitʰi*. A1 includes the same non-plural verb *pitʰi*, but paired with the non-singular pronoun *ʔitam*, resulting in the dual reading of *ʔitam* as 'we two'. A2 includes the same non-singular pronoun, but a verb which is plural by suppletion, resulting in the plural reading of *ʔitam*. For simplicity in the text of this paper we use only the terms singular and plural, rather than singular, non-plural, plural and non-singular.

only limited predictability.

Inanimate noun stems are predictably pluralized by reduplication only, and only inanimate nouns are pluralized by reduplication alone, thus, *k^wasa* 'dress', *k^wak^wsa* 'dresses'; *si·vɨ* 'pot', *si·sivɨ* 'pots'; *sipala* 'peach', *sispala* 'peaches'.³

Some animate nouns are pluralized solely by addition of the suffix *-mɨ* (*honani* 'badger', *honani-m* 'badgers'). This group includes all kinship terms and all

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3. Masayesva Jeanne 1982 presents an analysis of plural reduplication of nouns in Hopi. Her morphophonological rules for noun reduplication may be roughly paraphrased as: (1) Repeat the initial syllable with a long vowel (VV), whether the stem vowel is long or short, so that CVCV reduplicated is at this stage in the derivation CVVCVCV, and CVVCV reduplicated is CVVCVCV (*k^wasa* 'dress' becomes *k^waak^wasa*, *siivɨ* 'pot' becomes *siisivɨ*). (2) Delete a vowel of a medial syllable, so that the CVVCVCV of the output of rule (1) for the reduplication of a stem with a short vowel in the initial syllable becomes CVVCCV and the CVVCVCV for the reduplication of a stem with a long vowel in the initial syllable becomes CVVCVCV (*k^waak^wasa* becomes *k^waak^wsa* and *siisivɨ* becomes *siisivɨ*). A number of constraints need to be placed on this rule as stated; those which involve the number of possible consonants (not more than one) in the preceding and following syllables are presumably just consequences of the limitations on consonant clusters in canonical forms; others involve the choice of medial syllable from which a vowel is to be deleted in forms of more than three syllables, and some applications of the rule are lexically determined in noun forms (as perhaps all are in verb forms); cp. *ka·kar-ti-y* 'parrot-plural-oblique' in which the stem final vowel has been deleted and *co·coro-ti-y* 'bluebird-plural-oblique' in which the stem final vowel has not been deleted. (Note that we use raised dots to mark long vowels rather than sequences of two vowels in this paper.) (3) Shorten any long vowel which precedes a consonant cluster, so that the CVVCCV derived from the application of rules (1) and (2) in the reduplication of a stem with a short vowel in the initial syllable becomes CVCCV (*k^waak^wsa* becomes *k^wak^wsa*, the surface form; since no consonant consonant cluster appears in the derivation of the reduplicated forms of stems with long vowels, this rule does not apply to them and *siisivɨ* derived by rule (2) is the surface form). There are reduplicated noun plural forms which must be marked as exceptions to these rules, e.g., some for which the initial vowel of the reduplicated form is short rather than long; others for which the medial syllable vowel deletion rule does not apply or applies only optionally.

A further phonological rule which affects the shape of reduplicated noun plurals is that which deletes the final vowel of some suffixes in word final position. Both the noun plural suffixes, *-mɨ* and *-tɨ*, are final vowel losing suffixes; hence, though we cite the suffixes with the vowels, surface forms appear without them. The addition of the plural suffix *-tɨ* can create an environment for medial syllable vowel deletion, after which the final vowel of the suffix is deleted, leaving the form with a consonant cluster, e.g., *ʔuanɨ* 'ant', (*> ʔaaʔaanɨ > ʔaaʔanɨ + -tɨ > ʔaaʔantɨ >> ʔaaʔant* 'ants').

forms derived with the nominalizing suffix *-qa*, as well as nouns which can be classified on neither a semantic nor a formal basis. Personal and demonstrative pronouns also belong to this group. First person is pluralized by a combination of suppletion and *-mĩ* (*nĩ?* 'I', *ʔita-m* 'we'); the subject plural forms of the other pronouns include a unique alternant of the suffix, *-ma*.

The suffix *-mĩ* also marks plural in postpositions. Most postpositional words in Hopi consist of a pronoun (coreferential with the noun object of the postposition, if one is present) followed by a postposition⁴. If the object of the postposition is animate and plural, whether the object is specified in the sentence or not, the postpositional word is pluralized by *-mĩ*. (Except, when the object is first person plural only certain postpositions occur with *-mĩ*; compare *ʔita-mĩm* 'with us' and *ʔita-mĩ-mĩ* 'to us'.)

- (1) *ma.na tiyot ʔa-mĩm wĩ.nima* ('girl boy 3rd-comitative dance') 'The girl danced with the boy'.
- (2) *ma.na kwac-mĩ-y ʔa-mĩ-mĩm ni.ma* ('girl friend-pl.-oblique 3rd-pl.-comitative go home') 'The girl went home with her friends'.
- (3) *pam pepeq ʔa-mĩ-mĩm hĩrĩ.ti* (3rd sg. there 3rd-pl.-comitative remain') 'He stayed there with them'.

Some other animate nouns are pluralized by the suffix *-mĩ* in combination with reduplication of the stem (*ca.yo* 'child', *ca.cayo-m* 'children').

Even more animate nouns are pluralized by reduplication in combination with the suffix *-tĩ* (*moŋ^wi* 'chief', *moŋ^wi-t* 'chiefs'; *co.ro* 'bluebird', *co.coro-t* 'bluebirds').

Relatively few animate nouns are pluralized by the suffix *-tĩ* after a lengthened stem final vowel (*tika* 'prairie dog', *tĩka.t* 'prairie dogs').

Hardly any animate nouns are pluralized by suppletion, and then only with the addition of other potential plural markers, e. g., singular 'woman' *wĩ:ti* is pluralized in the following three ways: (a) by suppletion if we permit the under-

4. Hopi postpositional morphemes do not occur as free words; they are suffixally bound either to a lexically restricted set of inanimate nouns or to pronouns (to first or second person pronouns, or else to one of two third person pronominal forms, *ʔa-* and *ʔe-*; these third person forms are "prefixes" in the terminology of Masayesva Jeanne (1978) and "bases" in the terminology of Langacker (1977)).

lying stem to be **moya*; (b) by an exceptional reduplication of this stem, **momoya*-; (c) by the plural suffix *-mĩ* in the surface form for 'women' (*momoyam*).

2. All verbs with plural subjects are overtly marked for plural. Suppletion is one process that marks plural for verbs; and suppletion in Hopi always involves number in one way or another. Suppletive forms of intransitive verbs distinguish singular from plural subjects:

(4) *Sipala nönöspit ʔaŋq po:si* ('peach table from fall') 'The peach fell off the table'.

(5) *hĩqva-q kĩr sipala lõhö* ('blow-obviative evidently peach fall') 'When the wind blew, the peaches fell off'.

Note that though the singular form of 'peach', as opposed to the plural *sipala*, is used in (5), the fact that *lõhö* requires a plural subject forces the interpretation 'peaches'. Inanimate nouns with referents that are usually dealt with in quantity in Hopi culture are often used in singular form when their plurality is clear from the context. Such "singular" forms could be classified as neutral in number.

Suppletion of transitive verbs marks plural object, rather than subject.⁵

(6) *pam sipalat nönöspit ʔacmi tavi* ('3rd sg. peach table on put') 'She put the peach on the table'.

(7) *pam sipalat nönöspit ʔacmi ʔoya* 'She put the peaches on the table'.

So also, intransitive suppletive verbs which have been transitivized by the causative suffix *-na* (cp. (4) and (5), above):

(8) *nĩʔ caqaptat pos-na* ('I dish fall-causative') 'I dropped the dish'.

(9) *nĩʔ cacqaptat lõhö-k-na* 'I dropped the dishes'.

Plural for verbs is also marked by suffixes. The plural suffix *-ya* occurs with intransitive verbs (e. g., *mĩni* 'singular fall down', *mĩnĩk-ya* 'plural fall

5. It is as though English *kill* (if it took only singular objects) versus *massacre* (plural object implied) were extended to a score or more of pairs of English verbs. Yet Hopi is not unique; other -- even unrelated -- American Indian languages include in their lexical inventories about as many pairs of singular versus plural suppletive verbs as does Hopi. See Kinkade (1981) for examples of suppletive verbs in Salish, where a distinction between intransitive and transitive verbs also applies and the meanings of the verbs involved overlap in large degree.

down'; *momori* 'singular swim', *momor-ya* 'plural swim')⁶ as well as with transitive verbs:

(10) *ta·qa n̄i·y si:vət maqa* ('man me money give') 'The man gave me money'.

(11) *ta·taqt n̄i·y si:vət maqa-ya* 'The men gave memoney'.

In addition to the large number of verbs with *-ya* which do not share semantic or formal properties, all verbs derived with the causative suffix *-na* (cp. (8) and (9), above) coreference plural subject by *-ya*. Many transitive verbs which distinguish plural objects by suppletion, distinguish plural subjects by *-ya*, e. g.,

(12) *n̄i? caqaptat yo·ha* ('I dish break') 'I broke the dish'.

(13) *p̄ima caqaptat yo·ha-ya* 'They broke the dish'.

(14) *n̄i? cacqaptat* ('dishes') *p̄i·nya* 'I broke the dishes'.

(15) *p̄ima cacqaptat p̄i·nya-ya* 'They broke the dishes'.

Another plural form, *-to*, is used only in constructions with the aspect suffixes *-ta* and *-ti*, and all verbs derived with these suffixes are pluralized by *-to*.

(16) *pam ʔokiw po·kot ti:ho-ta* (3rd sg. poor-thing dog hurt-perfective) 'He hurt the dog'.

(17) *p̄ima* ('3rd pl.') *ʔokiw po·kot t̄i·ho-to-ta* 'They hurt the dog'.

(18) *pam ʔi·mi taya-ti* 'He laughed at you'.

(19) *p̄ima ʔi·mi taya-to-ti* 'They laughed at you'.

Reduplication is used to mark plural subjects of a few verbs, as *p̄i·n̄i* 'it's new', *p̄i:v̄ih̄i* 'they're new'; *na:sana* 'he eats abundantly', *na:nasna* 'they eat abundantly'; *t̄iwa* 'he sees it', *t̄itwa* 'they see it'. Some transitive verbs with plural objects marked by suppletion mark plural subjects by reduplication for both the singular object and the plural object forms, e. g., *sowa* 'he ate it', *soswa* 'they ate it', *n̄ö·sa* 'he ate them', *n̄ö:n̄ösa* 'they ate them'. Other such

6. The phonological changes in these examples are not dependent on the fact that they are plural; rather, some verbs regularly insert *k* between the stem and most suffixes (as does *mini* 'fall down'), other verbs regularly lose their final vowels before certain suffixes (as does *momori* 'swim').

verbs may mark the plural subject of the singular object form by a suffix and the plural subject of the plural object form by reduplication, as in:

- (20) *ʔitam pɪt wiɳasivɪt nönöspit ʔaw tavi-ya* ('we that box table on put-sg. object-pl. subject') 'We put the box on the table'.
- (21) *ma·na wiɳnasivɪt* ('boxes') *nönöspit ʔaw ʔoya* ('girl boxes table on put-pl. object-sg. subject') 'The girl put the boxes on the table'.
- (22) *pɪma ma·mant pep tɪtɪveniɳ ʔoʔoya* ('those girls there book put-pl. object-pl. subject') 'Those girls put their books there'.

Some modal and aspectual suffixes also occur in suppletive or reduplicative pairs which distinguish singular and plural, compare *-ta* and *-yɪŋ^wa* in sentences (23) and (24), *-ma* and *-wisa* in (25), and *-kaŋ* and *-ka·kaŋ* in (26) and (27).

- (23) *ʔim qa hi:ta tɪwiʔy-ta* ('you sg. neg. something know-sg.') 'You don't know anything'.
- (24) *ʔima qa hi:ta tɪwiʔy-yɪŋ^wa* ('you-pl. neg. something know-pl.') 'You (all) don't know anything'.
- (25) *ʔim taw-ma-q piw ʔitam tɪwat ʔimim taw-wis-ni* ('you sg. sing-sg. going-obviative then we also with you sing-pl. going-future') 'When you sing, we'll sing along with you'.
- (26) *pam wiɳiɳw-kaŋ tɪtɪqayna* ('3rd sg. stand-proximate sg. teach') 'She's standing up while teaching'.
- (27) *sola·wam le·ciw-ka·kaŋ wiɳiɳw-yɪŋ^wa* ('soldiers be lined up-proximate pl. stand pl.') 'The soldiers are lined up while standing'.

Plural is redundantly marked when one of these number-distinguishing suffixes is added to a verb stem which is inherently plural.

- (28) *tika ʔi·keʔ wari-k-iw-ta* ('prairie dog outside sg. run-sg. imperfective') 'The prairie dog is running outside'.
- (29) *ta·taqt paŋsok haqami yɪ:tɪ-k-iw-yɪŋ^wa* ('men to-there to-somewhere pl. run-pl. imperfective') 'The men are running that way'.

3. There are fewer prefixes than any other constituent type. The only prefixes for which number is marked are the first and second person possessives,

with singular differentiated from non-singular possessor (*ʔi-* 'my', *ʔita-* 'our', *ʔi·* 'your (sg.)', *ʔim·i-* 'your (pl.)').

4. The suffix *-m·i* marks a kind of distributional plural for animate objects of verbs derived with the suffix complex *-ʔy-ta* and for *-k* class verbs. With transitive *-k* class verbs with inanimate objects *-m(i)* marks iterative. (*k*-class verbs require a *-k-* between the stem and certain suffixes; this *-k-* does not co-occur with *-m(i)·*)

(30) *ta·qa po:koy waʔö-k-na* ('man his dog lie-k-causative') 'The man made his dog lie down'.

(31) *wi:ti ca·cakm·iy waʔö-m-na* 'The woman made the children lie down'.

(32) *pam höciwat ta·pa-k-na* ('3rd sg. doorway pound-k-causative') 'He tapped on the door'.

(33) *pam ki·law-qaʔe wi·nav·icit ta·pa-m-ta* ('3rd sg. building-proximate board pound-pl. -perfective') 'Because he was building a house, he hammered the board(s) repeatedly'.

Distributive plural (or iterative?) is also marked by the selection of *ʔaŋ* rather than another postposition for marking the same case.

(34) *pam pay k·ir lahot ʔaq k·i·ya* ('3rd sg. just evidently bucket into watered') 'He already filled the bucket with water'. Compare (35) for plural of 'bucket'.

(35) *pam pay k·ir lahot (or lalhot) ʔaŋ k·i·ya* 'He already filled the buckets with water'.

5. Though social factors may be involved in the history of a language's idiosyncracies, on a synchronic level idiosyncracies such as those summarized here for Hopi number, surely involve language without culture. Speakers of the language are unaware of the idiosyncrasy of a particular form or collocation, even if it follows a small eccentric pattern. To the Hopi speakers such patterns are not apparent; diverse number-differentiated forms appear to be interiorized as though they were completely regular. Their irregularities are, however, app-

arent to linguists. Can linguistics, so far, do more with irregularity (idiosyncrasy) in any particular language than to relegate it to the dictionary?

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