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SOME ASPECTS OF THE STRUCTURE OF RIO GRANDE TUNA

by

Randall Hannaford Speirs

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partial fulfillment of the requirements for the degree of  
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February, 1966

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First of all, I must gratefully acknowledge the receipt of a Fellowship from the University of Buffalo, under a grant from the United States Steel Foundation. Tenure of this Fellowship during the two years 1960-1962 made possible my studies for the doctorate, of which the present dissertation is a partial result.

At the University my introduction to the broader and deeper aspects of linguistics as an anthropological discipline, the study of language as a part of human culture, was directed by Professors George L. Trager and Henry Lee Smith, Jr., to whom, and to the other members of the Department of Anthropology at the University, I express my thanks.

Then I must acknowledge my debt to my colleagues of the Summer Institute of Linguistics, and especially Dr. Kenneth Lee Pike, for their having first introduced me to the science of linguistics. Dr. Pike, of the Institute and the University of Michigan, was most helpful in suggesting me for the Fellowship mentioned above.



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These acknowledgments would be incomplete without an expression of gratefulness to my friends among the Tewa who served as informants about their language, and who would not wish to be mentioned by name.

Finally, I must mention the help given me by my wife in patient discussion of problems, and the help of Miss Joan Urch in the typing of this dissertation.

Randall H. Speirs

Española, New Mexico

Fall, 1965

## LIST OF CHARTS

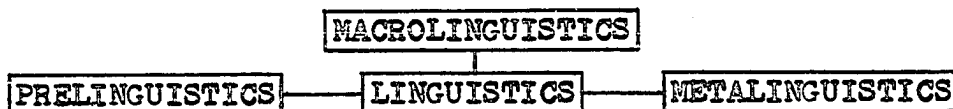
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## O. INTRODUCTION

O.1. Scope of study. We will be concerned herein with a description of some phases of the structure of the Tewa language (sec. O.2).

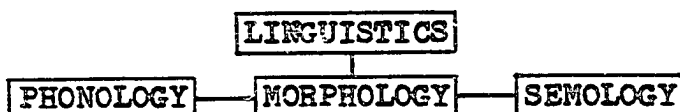
In general the data will be presented within a framework held in common by American "structural linguists," though some of the description will more specifically bear the imprint of the approach developed by George L. Trager and Henry Lee Smith, Jr.,<sup>1</sup> which may be briefly summarized as follows:

Linguistics is conceived of as the study of the central core, the "substance," of a larger area of human behavior which is termed Macrolinguistics--this larger area embracing all that can be conceived of as relating to the use of human speech. Within this larger term, two other areas of study emerge: Prelinguistics, which sets the lower threshold for the study of Linguistics proper, and which involves basically physical (e.g., acoustic phonetics) and physiological (e.g., the musculature of the speech organs) phenomena; and Metalinguistics, which relates language to other phases of human activity and to the "real world." The foregoing may be diagrammed thus:

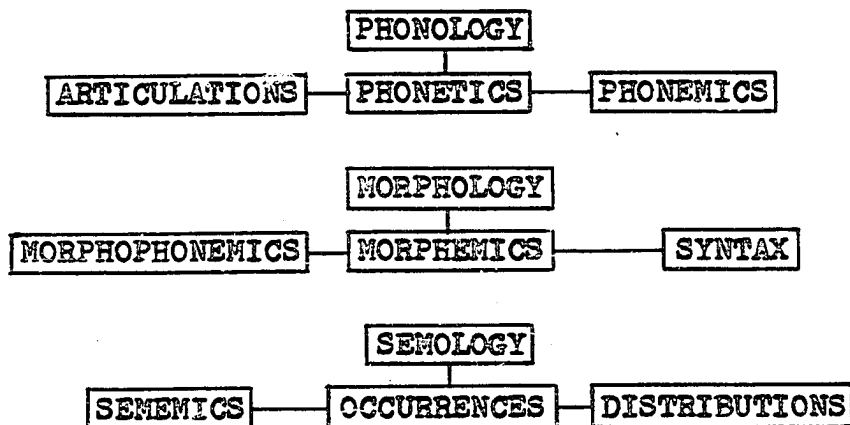


Of particular importance to linguistic analysis is the separation from language of paralinguage (variations in the actual linguistic system caused by prelinguistic physiological factors such as old-age voice quaver and the like, and by metalinguistic distortions such as whispering, drawling, etc.) so that it is the linguistic system alone that is under consideration.

Linguistics itself is subject to a threefold division:



Each of these is in turn subject to trifurcation:



And each of these nine subdivisions may in turn be triply subdivided.

Under Phonology, Articulations involves such matters as "bilabialness," "stopness," etc.; Phonetics a listing of

the sounds qua sounds (phones); Phonemics the grouping of these into units (phonemes) structurally significant for the given language.

Under morphology, Morphophonemics treats the morpho-phonemes, the phonological building blocks of morphemes; Morphemics lists and classifies the morphemes, the morphs which compose them, and the words which they in turn compose (establishing the definition of "word" for the given language, and involving a "word superfix" of suprasegmental nature); and Syntax analyzes binary combinations, including the resultant phonological modification (described by the operation of suprasegmental operands, "phrase superfixes") of the components that takes place in such combinations. Said combinations may be of word with word, resulting in phrase, and of word with phrase or phrase with phrase--the limits of these combinations being determined by the structure of the particular language.

The various areas of Semology have not as yet been as fully explored or clearly delineated as those of Phonology and Morphology. They would deal with some parts of structure that in other systems are called Syntax (which term in this system is limited as described), and would especially be concerned with choices that involve "meaning"--linguistic meaning, that is. For example, at the lower end of Semology one might have to deal with agreement between a set of free and a set of bound pronominal markers, or with a choice between a first person set vs. a third person set; whereas in

Syntax the mere combination of these as morphemic entities might have been considered. At the upper end of Semology such choices would involve utterance equivalents, style, etc.

Within this general outline we will deal with various aspects of Tewa phonology and morphology through morphemics. Where necessary for a clarification of these, some aspects of Tewa syntax and semology will also be discussed.

0.2. Distribution and relationships of Tewa. Tewa is an American Indian language spoken mainly in five pueblos, or villages, along the Rio Grande in northern New Mexico. These pueblos--San Juan, Santa Clara, San Ildefonso, Nambe, and Tesuque<sup>2</sup> (hereinafter abbreviated SJ, SC, SI, N, and T, respectively)--exhibit dialectal differences in both phonology and vocabulary, but the differences are slight enough--something on the order of regional differences within the major dialect areas of the United States--to warrant the grouping of them together as one language.

There is also a language, usually called "Hopi-Tewa," spoken in the village of Hano, which is located among the Hopi villages in Arizona.

In addition, Bandelier (Final Report of Investigations among the Indians of the Southwestern United States, 90) mentions collecting a few words in "Tehua" from an old "Tanos" Indian in Santo Domingo. Harrington also claimed that he found a few Tanos, or "Calisteo Tewa" ("Ethnogeography of the Tewa Indians," 481-5), still living there, and that he identified their speech as Tewa. Newman ("American Indian

Linguistics in the Southwest," 631) therefore posits a Southern Tewa branch to include Tano and Hano. Dozier, on the other hand, calls the Hopi-Tewa also Thano or Tano (The Hopi-Tewa of Arizona, 236). Because of the paucity of data, the Santo Domingo group will not be further referred to here. But, although there is enough divergence between Hopi-Tewa<sup>3</sup> and Rio Grande Tewa to also warrant the exclusion of the former from this study, yet there is also so much similarity (indeed, a fair degree of mutual intelligibility [Dozier, The Hopi-Tewa, 261]) that reference to it will be felt justified..

Chart 1 is appended to show the relationship of Tewa to other languages. It should be made clear that all lines drawn on the chart are not equally validated, since exhaustive studies of all relationships involved have yet to be made.<sup>4</sup>

Indeed, little recognition of relationships--or at least mention of them--seems to exist before the middle of the nineteenth century. Schoolcraft in 1853 includes a word list from "Tusuque" (Information Respecting the History, Condition, and Prospects of the Indian Tribes of the United States, 446-59); a listing of "E-nagh-magh" [=?] which included Taos, Vicuris [Picuris], Zesuqua [T], Sandia, Ystete [Isleta], and two pueblos near El Paso, Texas (689); and a listing for Taywaugh [Tewa], which included San Juan, Santa Clara, Pojuaque [Pojoaque], Nambe, and San Il de Conso [SI] (689). Gradual refinements of this listing eventually

placed T with the other Tewa pueblos and recognized the relationship of Hano to the Tewan group--though calling it also Tewa. In addition, Jemez was also brought into the list.

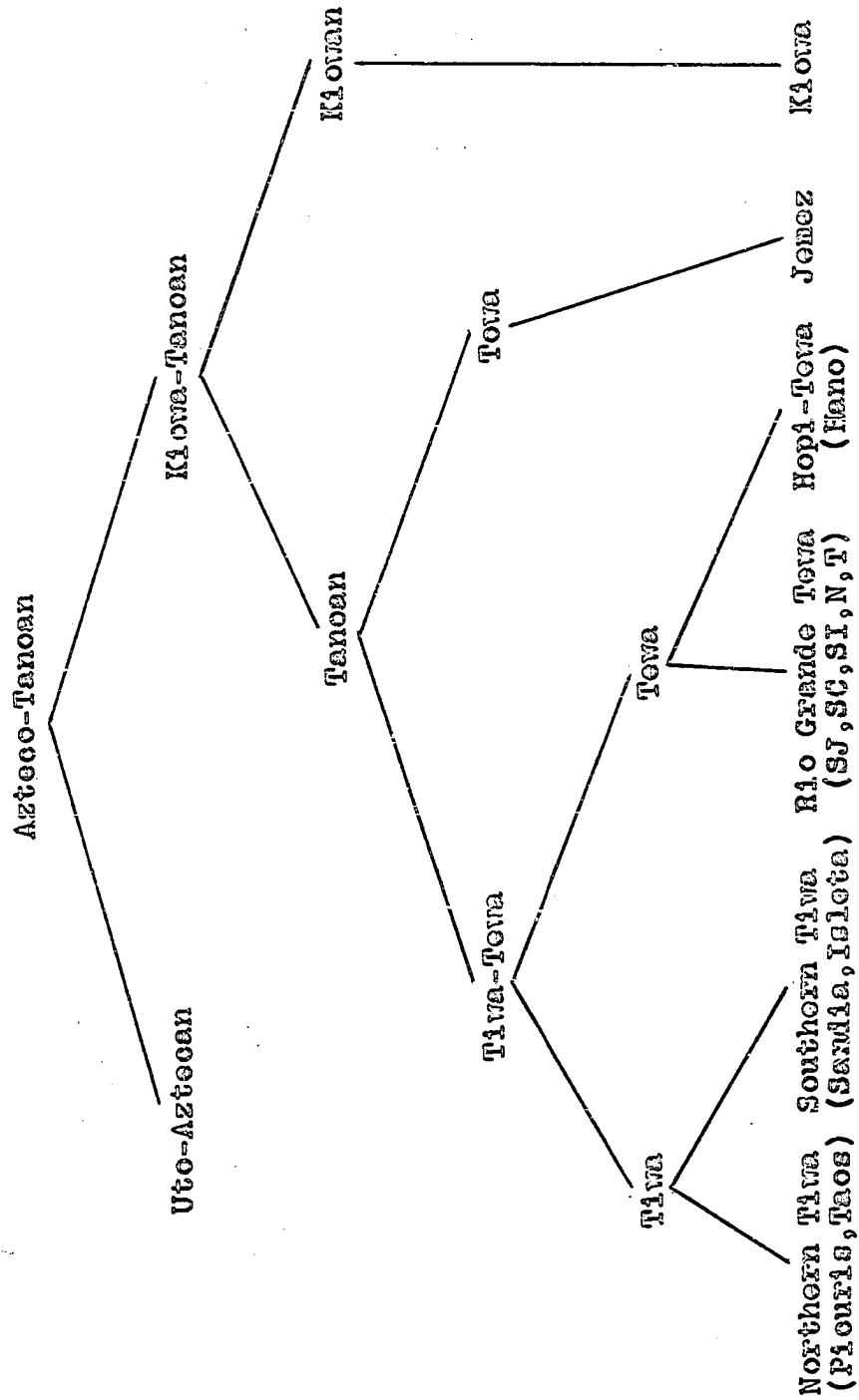
Powell, who previously had named the whole language group "Tewan" ("Pueblo Indians," 605), finally settled on the appellation "Tañocan" ("Indian Linguistic Families of America North of Mexico," 122), and this title, minus the tilde, has remained.

In 1910 Harrington listed Kiowan and Tanoan words that showed similarities ("On Phonetic and Lexic Resemblances between Kiowan and Tanoan"), but as for the actual establishment of correspondences, it remained for a recent study by Hale ("Jemez and Kiowa Correspondences in Reference to Kiowa-Tanoan") to deal at length with the tying of Kiowa to Tanoan via Towa, just as a pilot study by Trager and Trager ("Kiowa and Tanoan") briefly demonstrated the connection via Taos. When all of the evidence is available, of course, some adjusting of relationships may have to be made, such as the uniting of Kiowa and Towa before these are in turn united with Tiwa-Tewa.<sup>5</sup>

As far back as the 1870's Gatschet noted the possibility of broader affinities with Shoshonean and Aztecan ("Classification into Seven Linguistic Stocks of Western Indian Dialects"). Though the worth of his speculations is rather vitiated by other supposed resemblances to Apache and Dakota (Zwölf Sprachen aus dem Südwesten Nordamerikas), the more distant relationship of the Tanoan group to Uto-Aztecan



Chart 1.--Relationship of Tewa to Other Languages



was definitively established by Whorf and Trager in 1937 ("The Relationship of Uto-Aztecan and Tanoan").<sup>6</sup>

0.3. Field work. Data for this study were gathered at various times during the years 1956-63, approximately two-thirds of this time being spent in residence in the Tewa area in contact with the Indians in both linguistic and non-linguistic activity. Linguistic work has included both assimilation and analysis.

The amount of research in each pueblo has varied considerably, having been done quantitatively in the following order: SJ, SC, N, T, and SI. Details on informants as to sex, age, education, and language background follow. They will not only serve as an index of informants used, but will also afford some insight into the diversity that exists among individuals in what is sometimes dealt with as a homogeneous group. Ages given are approximate as of this present writing. The education of all has been, as far as is known, in Federal government schools, anything above the sixth grade level involving a boarding school.

1. SJ woman, 37, about ninth grade education. Married to a Yuma, lived away from pueblo for some years with no use of Tewa. Language of the conjugal home is English, but in all other pueblo contacts Tewa is used. A fluent speaker of Tewa, though tending to use many English loan words, and not acquainted with many terms for ceremonial or natural phenomena. Her children know Tewa in varying degrees, those who have lived with their grandmother being the most fluent.

2. SJ woman, 50, high school graduate, separated from husband. Has spent most of her life in the pueblo, can recall many tales that her grandfather and father used to tell. Excellent command of both English and Tewa. Tewa is used in the home for the most part, though her two youngest children are not fluent speakers.

3. SJ man, 43, brother of number 2 above, high school and trade school graduate, spent four years in the service. Married to a SJ woman, has lived for many years in Santa Fe and Albuquerque. Speaks excellent English, fair Spanish, and is a speaker of Tewa with almost linguistic insight into his language--is in fact one of the few encountered who puns in Tewa. Uses Tewa part of the time with his wife, seldom with his children, but periodically visits SJ at which times he uses the idiom with kin and friends.

4. Woman, 58, completed about eighth grade. Born in N of Spanish and Indian parents, raised in N but married into SJ and has adjusted her dialect during many years of residence there. Speaks Tewa to both children and grand-children. Fairly fluent in Spanish, reasonably so in English. Husband, when living, was a medicine man.

5. SJ man, 60, educational level unknown. Has lived most of life in SJ, though lived for a time in SC. Prominent in village ceremonial life. Speaks fair English and some Spanish, but uses Tewa at all times that the opportunity is afforded. Children are very fluent Tewa speakers.

6. SC woman, 45, eighth grade education (?), a widow.

has lived all her life in SC. Uses Tewa in home all of the time, though mixed with English loan words. Because a prominent potter, has much contact with tourists and is fairly fluent in English. Though children are well educated, they use much Tewa.

7. SC man, 42, completed about tenth grade. Brother of number 6 above and unmarried. Was in the service and has good command of English, but uses Tewa in the home and pueblo.

8. SC man, 60, education unknown, but presumably included some high school. Lived for many years away from the pueblo. Married to a Navajo woman, so uses English in the home, but quite fluent in Tewa (son by former marriage speaks Tewa well) and in English.

9. N man, 70, meager education. Married to a woman from N of Spanish-Indian parentage. Lived for a time in younger years away from pueblo, but has not acquired real fluency in English. Quite fluent in Spanish and completely so in Tewa, using the latter on all possible occasions. Has been prominent in governmental and religious affairs of the pueblo. This, plus age, gives him a vocabulary beyond the scope of that of most other Tewas. Son speaks some Tewa and Spanish, but prefers English.

10. N woman, 35, finished eighth grade. A widow, uses both Tewa and English in the home. Fairly fluent in each language. Children understand some Tewa, but seldom speak it.

11. T man, 43, finished high school. Married to a Spanish woman whose English is excellent. English is used exclusively in the home, which is located near, but not in, the pueblo. Children know only English. Uses Tewa when he visits the pueblo, though he claims that fellow-villagers sometimes belittle his efforts in the language. Spent four years in the service and works with non-Indians, but his English is by no means on a level with that of his wife.

Besides those listed above, with whom formal informant work has been done, informal checking of data has been conducted with various speakers of both sexes and different age levels in the four pueblos involved. Investigation in SI has been limited to a few conversations in Tewa with inhabitants of that pueblo.

## I. SOURCE MATERIAL

1.1 Introduction. Works which contain source material for Tewa may be divided into two categories: (1) those that may be considered of major linguistic relevance by virtue of their having been written by linguists either for specifically linguistic purposes or, though written for other purposes, e.g. ethnographic, nevertheless yield reasonably accurate data by reason of the author's linguistic training; and (2) those that can be regarded as of minor relevance because they do not meet the above criteria. These latter are, for the most part, ethnographic accounts of various sorts, and cite crudely recorded Tewa words simply as part of the total description. Their linguistic value is not to be entirely negated, for one can use them as a source for lexicon by re-eliciting the recorded forms--though it is to be admitted that in some cases these forms are recorded so poorly that much ingenuity must be used to decipher the author's intent.

The following list of works is, then, divided into the two categories mentioned. Within each category no special order is maintained except for general chronological arrangement under each author in sec. 1.2, and alphabetization of author (with alphabetizing of articles if there is more than one for each author) in sec. 1.3. Relative im-

portance is determined only by that which is sought in a given work (i.e. one title may be of more value for phonology, another for grammar, another for lexicon, etc.). More detailed discussion of portions of publications which are important for our purposes here will be included later in the relevant places.

Complete bibliographical data are given in the Bibliography at the end of this dissertation.

## 1.2. Major sources.

### John P. Harrington

The works of Harrington, linguistic and ethnographic pioneer in the Southwest, in some senses straddle the two classes mentioned above, in that on the one hand he endeavored to describe Tewa scientifically, and yet was content to record much of the language in a "more awkward and less accurate orthography" ("A Brief Description of the Tewa Language," 497). This quotation can be seen to be valid for not only the article containing it, but for most of Harrington's writings. It is particularly true in reference to notation of pitch and vowel length, which he only occasionally marks though he is well aware of their importance: "A marked musical accent has developed in Tewa . . . [which] is as indispensable as are the 'tones' of Chinese" ("An Introductory Paper on the Tiwa Language," 15).

In summary, Harrington's writings are of linguistic import because of their pioneering status, their reasonable accuracy where he considered detail of primary concern (one

need but compare his writings with those of previous investigators), their wide scope which includes phonology, some grammar, and a veritable treasure-trove of lexicon. They suffer from defects of limited description of phonology and grammar. In addition, impressionistic statement is often given in lieu of scientific detail, e.g. "Tewa speech is excessively nasal" ("A Brief Description," 497). Harrington seemed to have his difficulties, since in his opinion "The language is frightfully difficult for an English-speaking person to learn" ("A Brief Description," 503). This evidently covered both grammar (" . . . modificatory elements, for whose nicety of meaning the student in many instances acquires appreciation and linguistic feeling only with difficulty" ["A Brief Description," 503]) and phonology ("Pitch accents of Tewa words are difficult for the foreign ear to recognize; it is almost impossible for adult foreign organs to correctly reproduce them" ["Tiwa Language," 15]). Where he deals with comparative studies, he departs from the usual procedures of comparative method in that he simply lists similar forms side by side without making a systematic attempt to establish correspondences. Perhaps it might be more charitable to say that he does not complete the procedures, rather than that he departs from them, since inspectional and impressionistic techniques are obviously a necessary starting point--and, as a matter of fact it can be demonstrated that many of his purported cognates are indeed such (with the exceptions noted in the



next-to-last work listed here). Finally, it might be also noted, in passing only since lexicon per se is not the primary concern of this paper, that there are some errors in lexicon, e.g. reversal of meanings for 'jackrabbit' and 'cottontail' (Ethnozoology of the Tewa Indians, 17, 18).

Harrington stated in 1910, "No fact better illustrates the present fragmentary condition of our knowledge of American aboriginal languages than that the tongues of the Pueblo Indians of the southwestern United States have until now remained uninvestigated" ("Tiwa Language," 11). He attempted to remedy this situation, publishing these following relevant to Tewa:

Ethnogeography of the Tewa Indians, a massive work containing a phonemic inventory, a huge lexicon containing not only place names but a large variety of other words, many classified topically (cosmology, meteorology, etc.); and in addition etymologies which in some cases almost amount to minor grammatical sketches.

"Notes on the Piro Language," primarily an attempt to record what little was known of the extinct Piro language, but in the course of the article Harrington gives a list of some 180 words with cognates in some other Tanoan languages, including Tewa.

"An Introductory Paper on the Tiwa Language, Dialect of Taos, New Mexico," a paper written about a language related to Tewa. Harrington used the occasion of this writing as a means to state the relationship, and to illustrate

it briefly with a few examples of cognates and a comparison of general characteristics of Tiwa and Tewa.

"On Phonetic and Lexic Resemblances between Kiowan and Tanoan," in which paper he states that as he examined a recent Kiowa vocabulary, "striking lexic resemblances were noted" (119) between Kiowa and the Tanoan Tiwa and Tewa. The article lists about three pages of Kiowa words with cognates in the Tanoan languages (including Towa).

"A Brief Description of the Tewa Language," which describes--as the title suggests, briefly--the phonology and grammar of Tewa; to which is also appended a "very carefully translated version of the Lord's Prayer, accompanied by interlinear translation" (503). The brevity of the work is its chief drawback (setting aside its errors), but it does provide some excellent clues to be used as starting points in the study of Tewa.

"The Language of the Tano Indians," a brief note which states that the language of the Tano is Tewa. Unfortunately, though the evidence for this was supposed to have been submitted to the secretary of the gathering in which it was presented, the secretary notes that he failed to receive it.

"The Tewa Indian Game of Cañute," a description of a guessing game played with sticks. A table of "Phonemes" is given as a key to the pronunciation of the fair number of Tewa words which are transcribed as pertinent to describing the game.

"Tewa Relationship Terms," also containing a list of

phonemes. The kinship terms of Tewa and their usages are given. As is usual in most of Harrington's writings, much is included that is outside the immediate scope of the article at hand--in this case, e.g., all sorts of words that can be used in conjunction with describing people: slave, shaman, hermaphrodite, giant, etc.

Ethnobotany of the Tewa Indians, a book listed under W. Robbins as first author along with Harrington and Freire-Marreco. Robbins acted as botanist, Harrington as linguist for Tewa materials; Freire-Marreco supplied both botanical and Indian names for plants in the Hopi-Tewa area. Same type of materials as in the Ethnogeography, but far less voluminous.

Ethnozoology of the Tewa Indians, listed under Junius Henderson as first author. Same type of approach as in the Ethnobotany (Henderson in this case being a zoologist) save for the lack of inclusion of Hopi-Tewa material.

"Meanings of Old Tewa Indian Place Names around Santa Fe," a few pages similar to the place-name material in the Ethnogeography.

Vocabulary of the Kiowa Language, a dictionary of Kiowa with some "Tanoan etymologies (cognates) taken from the Tewa dialect spoken at San Juan Pueblo" (1) interspersed.

"The Southwest Indian Languages" and "The Sounds and Structure of the Aztecan Languages," an attempt to link up Zuni with Kiowa-Tanoan, these to Uto-Aztecan, then these

to Keresan in a "Pueblo-Aztecan" or just plain "Aztecan" stock. A few proposed cognates are given, but Harrington abstains from systematic listing because of "lack of space" (160)--though he devotes the following seven pages to such irrelevancies as the etymologies of the various pueblo names and large "mouthmaps" of the different languages. As it is, the "newly discovered stock" (157) remains far from discovered, such examples as the comparison of Keresan *ts'i-* 'water' with Tewa *ko-* 'water' (actually *-ko* is a morphophonemic variant of *-ʔo:* 'bathe, swim'; the word for water, as Harrington himself listed it elsewhere is *pʔo:*) and Tewa *po-ye* 'three' with Zuni *ha'-i* 'three' proving nothing. This being almost four decades later than some of his earlier pioneering publications, one might have expected some improvement in methodology. A slightly different and more accurate phonemic inventory is presented, however.

"Three Tewa Texts," recorded from a San Juan speaker. The stories are given in phonemic transcription, including indication of tone, with semi-literal translation. A source for grammar and vocabulary, though by no means all morphemes are clearly identified. The phonology is fairly accurate, with some errors both in segmental items and tone.

Edward P. Dozier

Dozier, a native speaker of Santa Clara Tewa, has written much on the ethnology of the Southwest, some of his articles containing many Tewa words; in addition he is the

author of one specifically linguistic description of Tewa, and the co-author of another.

"The Phonemes of Tewa, Santa Clara Dialect," with H. Hoijer as first author. Hoijer acted as linguist, Dozier as informant, albeit a rather sophisticated one since he had had linguistic training. A description is given of segmental phonemes, length, tone, and syllable structure. It is, by virtue of the merits of the authors, generally accurate, though limited in that it is the analysis of an idiolect of a dialect.

"Tewa II: Verb Structure," being "a revised and abridged version of the writer's M.A. thesis" (118, fn. 1). The phonology of the previous paper is assumed (though in many cases a non-phonemic echo vowel is written as though it were phonemic). As a statement of structure it is rather superficial; as a source for lexicon it is quite rich, since the bulk of the paper is given over to examples. The latter is partially offset by numerous spelling errors, the problem being that it is sometimes difficult to distinguish between allomorphs, inconsistencies, and typographical errors.

The Hopi-Tewa of Arizona, an ethnographic account which contains a table of "phonetic symbols," no specification given that they are actually phonemes. The table is roughly parallel to the Hoijer-Dozier analysis of Santa Clara speech, with some differences. A number of Hopi-Tewa words are recorded, including a listing of kinship terms.

Dozier equates Hopi-Tewa with Tano (263), calling Tano a dialect of Tewa (265 fn. 4).

"Kinship and Linguistic Change among the Arizona Tewa," a comparison of kinship terms among Hopi, Hopi-Tewa, and Tewa. The lists are presumably complete, though some of the Tewa terms listed are now obsolescent or non-universal in all Tewa pueblos.

"Two Examples of Linguistic Acculturation," a comparison of linguistic acculturation involving Spanish and Yaqui on the one hand and Tewa and Spanish on the other. The general thesis is that a laxer treatment of the Yaqui by the Spanish has led to much linguistic borrowing of Spanish into Yaqui, while a harsher regime involving Tewa led to a minimal acceptance involving mainly a number of nouns--and even these may be replaced by descriptive phrases if the Tewa wants to conceal his speech in the presence of Spanish speakers. Dozier lists processes which underlie new Tewa terminology: new words (some phrases?) which are compounded from old words, and old words given extended meaning. Common Spanish words which are phonologically "Tewa-ized" are also listed. If the examples are recorded phonemically (and there is no indication that they are not), there is a difference between this article and the phoneme article above in the handling of syllable final elements [ŋ] and [h].

John Yegerlehner

Yegerlehner investigated the language of the Hopi-Tewa

as part of his program of graduate study under C. F. Voegelin. His articles represent a revised and extended version of his doctoral dissertation. Although Hopi-Tewa per se is not the concern of this present dissertation, the structures of Hopi-Tewa and Tewa are similar enough to warrant comment on Yegerlehner's articles--hence their inclusion here.

"Structure of Arizona Tewa Words, Spoken and Sung," giving characteristics of both sung and spoken Hopi-Tewa, shows similarities and differences both segmentally and tonally.

"Arizona Tewa I: Phonemes," which describes the phonology of Hopi-Tewa in a combination of componential analysis and traditional phonemics. The results are rather difficult to follow, especially if the title of the article is to be taken at face value. Many "symbols" are given, but which of these are to be ultimately interpreted as phonemes is not made clear. If the conclusions are converted into a more standard presentation, so as to be comparable to Dozier's articles, definite differences will be seen, on the one hand between the structure of Tewa and that of Hopi-Tewa, and on the other between the two analyses of Hopi-Tewa. The former difference is undoubtedly due to the fact that these are indeed two distinct, though closely related, languages. The latter difference is probably a result of an admittedly incomplete analysis by Dozier (The Hopi-Tewa, 261).

"Arizona Tewa II: Person Markers," a listing and description of a set of pronominal verbal prefixes; a list of

independent pronouns to which they may cross-reference is also included. The segmentation of these prefixes into smaller morphs is done ad hoc: "Segmentation of these forms offers many alternatives, and the one adopted here could be replaced by others." (76).

### Others

"The Relationship of Uto-Aztecan and Tanoan" (Whorf and Trager), a reconstruction of Azteco-Tanoan. In relating Tanoan to Uto-Aztecan the authors first reconstruct Tanoan but do so very briefly because of the lack of extensive data from which to work at that time. The article assumes, however, the adequacy of the latter reconstruction as a basis for the former.

Typological and Comparative Grammar of Uto-Aztecan: I (Phonology) (Voegelin, Voegelin and Hale) deals mainly with a typological frame of reference for Uto-Aztecan phonemes, but contains a section on Kiowa-Tanoan. A paragraph is devoted to typologizing Hopi-Tewa phonemes, but no Tewa is mentioned.

1.3. Minor sources. Some of the following, as the descriptions will show, are mere classificatory listings which relate Tewa to other languages or relate the Tewa pueblos to one another. They are included here for the sake of historical interest, as well as for completeness. Later classifications, such as Sapir's in the fourteenth edition of Encyclopaedia Britannica, various maps of the distribu-



tion of language groups, etc., are not mentioned inasmuch as they are merely reiterations of previous data and include no new basis for classification.

Indeed, as one examines the material on which some of the early recognition of relationships was based he must marvel that there was recognition at all, and the more so that the relationships posited were for the most part fairly accurate.

Others of the works now described are, as has been stated, ethnographic accounts containing varying numbers of vocabulary items, usually poorly transcribed.

Adolph Bandelier: Final Report of Investigations among Indians of the Southwestern United States, containing several Tewa geographical terms and a few other Tewa words. Also records a few names given by a "Tanos" Indian at Santo Domingo.

A.W. Bell: "On the Native Races of New Mexico," lists the Pueblo Indians (as opposed to "Wild Indians") as belonging to four "dialects": the four Tiwan, the Five Tewan, plus Pojoaque, Keresan, and Jemez.

J. C. E. Buschmann: "Die Völker und Sprachen Neu-Mexiko's und der Westseite des britischen Nordamerika's," puts together all of the Tanoan pueblos, also gives a couple of word lists from Simpson and (Whiting via) Schoolcraft, q.v. below.

W. B. Douglass: "Notes on the Shrines of the Tewa and other Pueblo Indians of New Mexico," contains a few geograph-

ical terms.

J. W. Fewkes: (1) "The Kinship of a Tanoan-speaking Community in Tusayan," includes a few Hopi-Tewa clan names; (2) "The Winter Solstice Altars at Hano Pueblo," gives some Hopi-Tewa words for clan and month names; (3) "Tusayan Migration Traditions," also contains clan names. In all of the foregoing, the Indian words are difficult to decipher.

B. Freire-Marreco: (1) "A Note on Kinship Terms Compounded with the Postfix 'e' in the Hano Dialect of Tewa," contains many Hopi-Tewa kinship terms, fairly well recorded; (2) "Tewa Kinship Terms from the Pueblo of Hano, Arizona," with some Rio Grande Tewa kinship terms given for comparison with Hopi-Tewa terms.

A. S. Gatschet: (1) "Classification into Seven Linguistic Stocks of Western Indian Dialects," classifies various Southwestern languages, correctly places together those of Tanoan origin, and even links Tanoan to "Numa" or Uto-Aztecan. Lists some 300 words and expressions in Tewa, 200 in Hopi-Tewa. His sources for these lists (Loew and Yarrow) use radically different spelling systems; (2) "Indian Languages of the Pacific States and Territories and of the Pueblos of New Mexico," gives groupings of the Tanoan languages, includes "Los Luceros" with the Tewa; (3) Zwölf Sprachen aus dem Südwesten Nordamerikas, again groups the various languages, includes word lists in Tewa and Hopi-Tewa plus Tewa phrases.

F. W. Hodge: (1) Articles in the Handbook of American

Indians are listed under each pueblo name. In each, clan names are listed, plus Tewa names for each of the Tewa pueblos according to various writers; (2) "Pueblo Indian Clans," a listing of clan names in various pueblos including some Tewa and Hopi-Tewa; (3) "Pueblo Names in the Oñate Documents," an attempt to straighten out confusion in the spellings of various pueblo names.

W. C. Lane: "Letter on Affinities of Dialects in New Mexico," a crude language classification of the Tanoan pueblos with many misspellings of pueblo names.

Vera Laski: (1) Seeking Life, contains a glossary of Tewa terms, mostly ceremonial, plus other words scattered throughout the book. Fairly well recorded. (2) "The Rain-god Ceremony of the Tewa," with a handful of words which have to do with the ceremony involved.

R. G. Latham: "On the Languages of Northern, Western, and Central America," a rather chaotic classification which, e.g., links Laguna with Jemez and Tesuque. The Tewa data are barely recognizable.

O. Loew: "Lt. Wheeler's Expedition nach Neu Mexiko und Arizona," mentions SI and Hano as speaking the same language.

E. C. Parsons: (1) "Cérémonial Tewa au Nouveau Mexique et en Arizona," compares the ceremonial systems of the Tewa and Hopi-Tewa, includes a few ceremonial terms; (2) Pueblo Indian Religion, with several Tewa and Hopi-Tewa words scattered throughout; (3) "Tewa Kin, Clan, and Moiety," includes a few words related to the topic of the title.

(4) "Tewa Mothers and Children," records a few words relevant to the subject; (5) Tewa Tales, contains various words in both Tewa and Hopi-Tewa; (6) "The Ceremonial Calendar of the Tewa of Arizona," contains several Hopi-Tewa words; (7) "The Kinship Nomenclature of the Pueblo Indians," with a chart of kinship terms including Tewa and Hopi-Tewa. In the former are listed both Harrington's and Parson's versions (Harrington's in all cases being more accurately recorded); (8) The Social Organization of the Tewa of New Mexico, a long treatise covering kinship, ceremony, folk tales, etc., all sections having a liberal sprinkling of Tewa words.

E. C. Parsons and R. Beals: "The Sacred Clowns of the Pueblo and Mayo-Yaqui Indians," contains a few ritual terms.

J. W. Powell: (1) "Indian Linguistic Families of America North of Mexico," in which Powell not only classifies languages, correctly grouping the Tancan, but also gives a history of classifications. First to name the family "Tañcan" (the tilde dropped by later writers). Tentatively related Tancoan to Shoshonean, but controverted any relationship to Aztecan: (2) "Pueblo Indians," in which he groups the pueblos by language, applying the name "Tewan" to the whole family, calling the southern Tiwa "Tano." (3) "The Nationality of the Pueblos," another assignment of the pueblos to language groups and denial of relationship to Aztec.

H. R. Schoolcraft: Information Respecting the History, Condition, and Prospects of the Indian Tribes of the United

States, containing a list of some 350-400 words from Tesuque recorded (almost unintelligibly) by D. V. Whiting.

J. H. Simpson: Journal of a Military Reconnaissance from Santa Fe, New Mexico, to the Navajo Country, with an appendix containing a vocabulary of some forty words of Tewa through E. M. Kern.

William Whitman: (1) The Pueblo Indians of San Ildefonso: A Changing Culture, a rewrite of (2). Appendices of Tewa kinship terms and personal names are included with a few other Tewa words scattered through the book; (2) "The San Ildefonso of New Mexico," with a page of kinship terms, plus several other words.

In addition to the above published sources, the following unpublished materials are listed. They are manuscripts in the archives of the Bureau of American Ethnology, most of which, except for Harrington's are poorly transcribed.

H. S. Budd: (1) A letter which includes SJ numerals; (2) Another letter which includes the numerals plus some sentences from SJ and some linguistic notes. (3) Another letter with a few SJ words.

F. G. Galbraith: A vocabulary of some 14 pages in English, Spanish, and Tewa. Some of the last is unrecognizable as Tewa.

A. S. Gatschet: (1) A few notes on "Tehua" in a notebook; (2) A list of the pueblo languages, grouping all Tewa pueblos together as one language.

J. P. Harrington: (1) Many hundreds of 3x5 slips with Tewa vocabulary, in no particular order; (2) An explanation of Tewa sounds, written in conjunction with the Ethnozoology and Ethnobotany volumes.

J. Hewitt: List of numerals from SJ compared with other languages. Probably compiled by him from other BAE manuscripts.

J. A. Jeancon: An ethnographic account of SC, including a few Tewa words.

J. Mooney: A small notebook containing Hopi-Tewa vocabulary.

E. Palmer: A Hopi-Tewa vocabulary.

J. H. Simpson: A two-page vocabulary list.

E. Palmer and J. H. Simpson: A scribe's copy of the two preceding.

A. Stephen: (1) Vocabulary of Hopi-Tewa; (2) A forty-eight page vocabulary extracted from the preceding and alphabetically arranged.

M. C. Stevenson: Several pages of vocabulary notes from SC and SJ.

J. Sullivan: Vocabulary of Hopi-Tewa, a partially filled 150-page form.

T. W. Voetter: SC vocabulary, seven pages.

H. C. Yarrow: Vocabulary from "Los Leuceures" (near SJ), with a note stating that it was compared with a vocabulary obtained by O. Loew at the same place.

## II. PHONOLOGY

2.1. Introduction. In the phonological description and accompanying examples, phonetic data will be enclosed in square brackets ([ ]) and will employ symbols and terminology as outlined in Trager, Phonetics: Glossary and Tables. Phonemic transcription will be enclosed between slant lines (/ /) when being discussed as such in the text, but in lists and other examples will be left unmarked. For typographical ease, the following symbols will be substituted for those more usually employed:

V̄ instead of V̄ for nasalization, where V = any  
vowel

V: instead of V' for length

ae instead of æ

In addition, while phonemic high tone will be marked with acute (´) and glide with circumflex (^) over vowels, low tone will be left unmarked except where its marking is relevant to the specific discussion at hand. A phoneme called "laryngealization" will be indicated by apostrophe (´) after vowels. Stress and transition or "juncture" will not be indicated excepting in those sections in which they are discussed, or where their indication is necessary for other phonemic conclusions. Other special symbols will be described as they are introduced.

English glosses will be given in simple form only, since this is not a lexical study. Some of the complexities of actual meaning-value, particularly those involved in noun number and class, and in verb prefixes and modes will be dealt with in greater detail in sec. 3.4.22 and in chapter IV.

2.1.1. Other analyses. The following description of Tewa phonology agrees in the main with that of H. Heijer and E. Dozier (hereinafter abbreviated H&D) of Dozier's idiolect, as set forth in "The Phonemes of Tewa, Santa Clara Dialect." Differences between the present analysis and that of H&D result, first, from the fact that this analysis is based on materials from many speakers from different pueblos, and thus purports to present an overall pattern for Tewa rather than the reflection of an idiolect. Second, in those areas of phonology covered by H&D, I will describe more phonetic detail. Third, I will deal with areas not covered by them. Finally, specific exception will be taken to certain of their phonemic conclusions.

Some comparison will also be made between this analysis and the only other attempt at description of Rio Grande Tewa, that of John P. Harrington (hereinafter abbreviated H). In addition, John Yegericknor's methodology in the pitch analysis of Hopi-Tewa will be considered.

2.1.2. Dialect differences. Isoglosses based on phonological criteria might be drawn which would result in dia-



least delineation partially, but by no means exclusively, coterminous with pueblo boundaries. Examples are noted in the following subsections. Other examples of purely idiolectal differences have also been observed but are not described here.

2.1.21. /j/ vs. /y/. The most important dialect delineator, since it involves an additional phoneme; is the use in SC of /j/ in words in which only /y/ is heard in other pueblos, though /y/ is also a phoneme in SC. However, while all SC speakers will consistently use /y/ in certain positions, some will use /y/ sporadically in positions where others use /j/, and some idiolects will even vary in the use of the two phonemes from one utterance to the next.<sup>7</sup>

	<u>SC</u>	<u>Other pueblos</u>
'two'	wíje	wíye
'four'	jéno	yéno
'he's practicing'	?ijíjónde'	?iyíyónde'

In the SC examples, wíye, yéno, ?iyíyónde', and even ?ijíyónde' (possibly on the model of jíyá 'nother', in which /y/ is always heard in the second syllable) have been observed.

2.1.22. Stop vs. nasal-plus-stop. The second most wide-spread dialect difference generally aligns SC, T, and SI against SJ and N. The former use a plain voiced stop in some environments in which the latter use a nasal plus homorganic stop, though occasionally one will hear certain

words in the "n-pronouncing" group also spoken without the nasal, particularly, ?edó--?ende 'crow' and sedé--sendé 'old man, husband'.

	<u>SC, T, and SI</u>	<u>SJ and N</u>
'pretty'	sa?wó'dí'	sa?wó?ndí'
'donkey'	búdu	búndu
'liver'	hadu	handu

2.1.23 Long vs. short vowel. In two-syllable verb bases in the potential mode (sec. 3.4.224) words that have a short V in the initial syllable in most pueblos, have a long V in SC. In addition, if the other pueblos use a high tone on this syllable, SC will instead use a glide tone.

(Affixes are set off by hyphens in the following examples.)

	<u>SC</u>	<u>Other pueblos</u>
'I'll set it down'	dó-sé:go-í	dó-ségo-í
'I'll turn it over'	dó-ja:mú-í	dó-yamú-í

2.3.24 /y:/ vs. /un/. Some words pronounced with /un/ in SC are pronounced with /y:/ in SJ and N (other pueblos not checked for this).

	<u>SC</u>	<u>SJ and N</u>
'corn'	xún	xy:
'cedar'	hún	hy:
'ho's roading'	?itundo'	?ity:?'o'

In addition, note the following alternation between oral /u:/ and /un/:

	<u>N. T. and SJ</u>	<u>SC and SJ</u>
'he sees it'	?imú:re'	?imúnde'

2.1.25. /š/ vs. /y/ or /ñ/. A few morphemes that in SJ contain /š/, in other pueblos contain /y/ or /ñ/.

	<u>SJ</u>	<u>Other pueblos</u>
'he's digging'	?išge:re'	?iñae:re'
'he's dancing'	?išárónde'	?iyárónde'
'that person'	?o šge:	?o ñae: (SC, other pueblos not checked.)
'he fled'	našá	mayá

Note that in the examples the š--y alternation occurs before /a/, the š--ñ before /ae/. I have no data to contradict this correlation where the alternation occurs. But other morphemes show no such alternation, e.g., šare 'a dance', šge: 'wart', in all pueblos. For a further problem with /ñ/ and /y/, however, see the following section.

2.1.26. /ñ/ vs. /y/. Some speakers in SJ use /y/ plus nasal V in some words in which other speakers, both SJ and other pueblos (though not all have been thoroughly checked for this) use /ñ/.

	<u>ñ speakers</u>	<u>y speakers</u>
'girl'	?a?nú	?a?yú
'fly (insect)'	?yñu	?yyu
'smoke'	?i:ñae:	?i:yge:

In all such cases there is heavy allophonic nasalization of the /y/ for examples in the second column. Other words show /ñ/ in all cases, e.g., táfóñi? 'broom'.

2.1.27. [h<sup>w</sup>] vs. [x<sup>w</sup>]. Some speakers use [h<sup>w</sup>] where others use [x<sup>w</sup>]. Phonetic conclusions are in sec. 2.3.3321.

	<u>h<sup>w</sup> speakers</u>	<u>x<sup>w</sup> speakers</u>
'tail'	[h <sup>w</sup> áén]	[x <sup>w</sup> áén]
'window'	[h <sup>w</sup> áfóri]	[x <sup>w</sup> áfóri]

2.1.28 /w/ vs. /x<sup>w</sup>/. SJ uses /x<sup>w</sup>/ in some words in which other pueblos use /w/.

	<u>SJ</u>	<u>Other pueblos</u>
'he believed'	?ix <sup>w</sup> qoñu	?iwqoñu
'he descended'	nax <sup>w</sup> q	nawq
'itch'	x <sup>w</sup> owa	wowa

But, e.g., wá: 'egg', wqe: 'teeth', in all pueblos, and wéwáci 'life' in all but N (sec. 2.1.210).

2.1.29. Nasal vs. oral vowel. Some words that in other pueblos have an oral /o/ or /e/ have nasal /o/ or /e/ in SJ.

	<u>SJ</u>	<u>Other pueblos</u>
'he's sleeping'	nayóʔk'ó:	nayóʔk'ó:
'he chased him out'	?ó:ɣqəpiye	?ó:zəpiyo

2.1.210. Apocope. A few words in N contain one less syllable, with compensatory lengthening, than they generally contain in other pueblos. (The first example is sometimes heard in its shortened form outside of N.)

	<u>N</u>	<u>Other pueblos</u>
'father'	tá:	tárá
'mother'	yá:	yíyá
'bread'	pá:	páwá
'life'	wá:ei	wéwáei

Note that in each case a sequence of two high tones is found in the longer form.

2.1.211. Use of glottal stop. Some speakers use glottal stop in places where others do not.

	<u>Glottal stop</u>	<u>No glottal stop</u>
'heaven'	nahkó?wá	nahkíwá
'morning'	hé?róndí	hóróndí

2.1.212. /ae/ vs. /a/. A few morphemes that for most speakers contain /ae/, for some contain /a/. No particular correlation with pueblo has been noted here.

	<u>/ae/ speakers</u>	<u>/a/ speakers</u>
'Navajo'	wáen sáve	wán sáve
verb prefix <sup>3</sup>	daen-	dan-
verb prefix	?eváen-	?evân-

2.1.213. For some speakers, there is a contrast between syllables closed simply by glottal stop and syllables that have an echo vowel after the glottal stop. For other speakers, the presence or absence of the reduplication is predictable. The examples given below, obtained from one speaker, are cited phonetically with the echo indicated by raised vowel symbol. Further discussion, with phonemic con-

clusions, will be reserved until sec. 2.4.

	<u>No reduplication</u>	<u>Reduplication</u>
'money'	[éqe?]	
'he's coming'		[na?qe?ʰe]
'cross'	[ré?wan]	
'someone'		[te?ʰwi]
'thread'	[pə?]	
'he's making it'		[?təpa?ʰ]

2.1.214. Long V vs. geminate /n/. There is a difference between SJ and T vs. SC (other pueblos not checked) involving lengthening of vowel vs. gemination of /n/ respectively in certain combinations of morphemes.

	<u>SJ and T</u>	<u>SC</u>
'rope'	h <sup>w</sup> ika:nin	h <sup>w</sup> ikannin (composed of h <sup>w</sup> i-kan-nin)
'these going'	dima:nin	dimaennin (composed of di-maon-nin)

It is apparent that dialect differences might in some cases require a multiple listing for specific examples given throughout this study, especially for those that could involve a confluence of two or three variations. For this reason, examples are given in one form only (usually the statistically most prevalent), excepting, as in the above sections, where a difference is specifically being discussed.

## 2.2. Vowels.

2.2.1. Definition. A vowel in Tewa will be defined as that part of a syllable (see. 2.7.1) which (1) is vocalic,

(2) bears the syllabic peak of intensity, and (3) carries a contrastive tone.

2.2.2. Listing. Towa vowels are /i e ae u o a/. These may be charted, in view of their distribution with fronted and non-fronted allophones of /k/, as follows:

<u>Front</u>	<u>Back</u>
i	u
e	o
ae	a

Vowels may be accompanied by length and/or nasalization (secs. 2.6.3, 2.5), though some combinations do not occur, namely \*q: and \*q:, and some are dialectally restricted (q and q above, see. 2.1.29).

H&D state that /j:/ does not occur in their material ("Phonemes of Towa," 142), but this lack can be easily supplied (see examples below, see. 2.2.4). Aside from this omission, plus the expected dialectally determined emission of /q/ and /q/, the vowel inventory outlined above coincides with theirs.

H in all earlier descriptions (e.g., "Ethnogeography," 39) lists only five oral vowels, omitting /ao/,<sup>9</sup> but posits a seventh nasal, ǰ, described as being of the quality of the vowel in French pas. Later, however, he lists the six oral vowels and adds, "Also long, also nasobuccal" ("The Sounds and Structure of the Aztec Languages," 165). In no description does he mention any limitations in combinations

of vowel quality, length, and nasalization.

### 2.2.3. Phonetic description.

/i/ occurs as high front tense unrounded [i], and in syllables closed by nasal consonant or in final weak stressed syllables as [ĩ].

/e/ is higher mid front tense unrounded [e] when long, is slightly lower [ẽ] when short, and is [Ẽ] in a syllable closed by nasal consonant. For this last, as well as for [ĩ], H&D simply say "before a nasal consonant" ("Phonemes of Tewa," 142). They also state that /e/ before a nasal consonant "can only with difficulty be distinguished from *æ*,"<sup>10</sup> but I do not find this to be the case (but see the following discussion for /æ/).

/æ/ is higher-low front lax [æ], except that following /n/ it is raised somewhat, and following /n/ raised still more, virtually to [Ẽ].

With /n/, the allophone for most speakers is closer to [æ] than to [e], and a few words exist which show tonous contrast between /nac/ and /ne/, e.g. *nomúnde* (or *bonúnde*) 'melon', and *nerikána* 'American'. The latter is obviously a loan word, the former possibly so--and even if not, it varies between n and b, as indicated, for different speakers. But the allophone with /n/ is more difficult to deal with, since it is much closer to [e], and since no contrast of any kind with \*/ne/ can be established--\*[no] nowhere occurs in any of my data. I have assigned [Ẽ] to /æ/



because of the reaction of native speakers in informal reading tests.

H&D do give examples of contrast for /ae/ vs. /aæ/, also giving contrasts after /n/ and /ñ/. In their examples, however, I hear no difference between what they write as e and as ae. Their examples, with my phonemicization, are compared:

	<u>H&amp;D</u>	<u>Spolsky</u>
'to this place'	né:píjeh <sup>ll</sup>	naópije
'new'	nje:	nae:
'women'	k <sup>w</sup> iñe?	k <sup>w</sup> iñae'
'children'	?e:ñje:	?é:ñâe:
'he goes out'	napi:mèn	napi:maen
'he gives'	?imje?	?ime'

An example of difference before /n/ is also noted:

H&D ?onbí: vs. my ?aembí: 'we two turned to look'.

Where parallel examples can be found in H's material (e.g., "Ethnogeography," 79; "A Brief Description," 502), his recording and mine agree.

/u/ occurs as high back tense rounded [u], but as lowered and less rounded [U'] in syllables closed by nasal consonant. H&D do not mention the latter.

/o/ is higher mid tense [o] when long, is slightly lowered [o'] when short, and is lower [ɔ'] in syllables closed by nasal consonant. Again, H&D do not mention this last conditioning.

/a/ is low central tense unrounded [a]. For some

speakers, the long nasalized variety is quite backed, almost [ɑ̃]. H&D give no examples for /a/, though they include it in their vowel chart.

#### 2.2.4. Examples.

	Short Oral	Long Oral	Nasal Syllable	Short Nasal	Long Nasal
i	/sɪ/	/si:/	/pɪn/	/ʔó:hɪʔan/	/ʔi:sãe:/
	'six'	'intestine'	'heart'	'he likes it'	'snake'
e	/te/	/te:/	/sen/	/ʔó:xɔhpiye/	--
	'wagon'	'tree'	'man'	'he chased him out' (SJ)	
ae	/puváo/	/ʔidãe:/	/naon/	/tɔe/	/páo:/
	'worn'	'he tasted it'	'tongue'	'ten'	'deer'
u	/sú/	/sú:/	/nasun/	/natý/	/xý:/
	'arrow'	'wild spinach'	'it smells'	'he said'	'corn'
o	/pó/	/pʔó:/	/pʔæn/	/nayeʔkʔó:/	--
	'log'	'moon'	'head'	'he's sleep- ing' (SJ)	
a	/ka/	/ka:/	/kan/	/tó/	/kɔ:/
	'question interjection'	'leaf'	'cradle beard'	'seed'	'lard'

#### 2.3. Consonants.

2.3.1. Definition. A consonant in Tewa is a unit either oral or nasal in nature, or vocalic but lacking criteria listed in sec. 2.2.1 for vowels, namely peak of syllabi-

city and contrastive tone.

2.3.2. Listing. Tewa consonants are: stops /b, d, t, g, p, t, k, k<sup>W</sup>, ʔ, pʔ, tʔ, kʔ, kʔ<sup>W</sup>/; affricates /c, č, cʔ, čʔ, ʃ/; spirants /s, š, v, f, θ, z, z<sup>W</sup>, h/; nasals /n, m, ñ/; semivowels /w, y/.

He also lists g (y), ŋ, and ʒ<sup>W</sup> as phonemes ("Ethnogeography," 39), and in his alphabetic order includes ɲ/ (palatalized ŋ). These are treated below in secs. 2.3.311, 2.3.34, and 2.3.35.

If loan words from Spanish and English were to be admitted as valid sources for the phonemic inventory, other phonemes would have to be added. Spanish loan words fall into various groups:

(1) Some words have been taken over as is because they present no new patterns: *mundo* 'world'; *pân* 'leaf bread'; *ʔáva* 'grape'.

(2) Some would fit the present-day patterns of Tewa but have been nonetheless altered: *ténde* 'bull' < *tore*; *búndu* or *bádu* (sec. 2.1.22) 'donkey, burro' < *burro*; *kaváyu* 'horse' < *caballo*. Why these were not taken over as \**téro*, \**búro*, and \**kabáyo* is not known. Perhaps a historical reconstruction would yield some clues as to the possible structure of Tewa at the time of initial Spanish contact.

(3) Some that presented syllable-final patterns antithetical to those of Tewa (sec. 2.7.1) were altered by dropping the final consonant and lengthening the vowel: *pahtô*:

'pic' < pastol; pihkâ: 'type of village official' < fiscal. Some simply drop the syllable-final consonant: poke 'because' < perque.

(4) This group introduces phonemes, patterns, or partial patterns, that do not otherwise exist in Tewa: n<sup>v</sup>ókare 'Wednesday' < miércoles (palatalized n); b<sup>v</sup>éno 'Friday' < viernes (palatalized b); p<sup>w</sup>énte 'bridge' < punte (labialized p--though some other labialized segments do occur [see 2.3.312, 2.3.312, 2.3.332]); léva 'seat' < lova (lateral). It is of interest to note in reference to l that Spanish col 'cabbage' is taken over as kâ:le; but chile 'chile' is cîndi or cîdi. l is found, however, in Hopi-Tewa.

These innovations are few in number in my data, being limited to those just mentioned. Dozier lists also a vr cluster in kavra 'goat' < cabra ("Two Examples of Linguistic Acculturation," 154).

The use of Spanish loan words is declining now, but many English words are used. The pronunciation of the latter depends on the linguistic sophistication of the speaker. Those who speak English with an accent (e.g., substituting /s/ for /z/, as in /his/ for /hiz/, etc.) will tend to pronounce the English words the same way in a Tewa matrix--whether a single word or a series of words. Those whose English is more nearly standard will ordinarily retain their pronunciation of English words in a Tewa matrix, though there may be an altering of an occasional word that is used by most Tewas in what has come to be a common construction.

E.g., the verb "use" is altered in *dóyús?o'* 'I'm using it' (*dó-* 'I-it'; *yús* < use; *?o'* 'to do').

In general, no loan words will be used for the establishing or exemplification of the Tewa phonemic inventory, though a specific problem involving loans has been dealt with in sec. 2.2.3 under /ae/.

### 2.3.3. Description.

#### 2.3.31. Steps.

2.3.311. Voiced stops /b, d, r, g/ are relatively lenis. H&D describe them as "fully voiced," but then say that "they are indeed pronounced very much like the corresponding American English sounds" ("Phonemes of Tewa," 140), overlooking the fact that in the speech of most Americans the voiced stops are fully voiced only intervocally in normal transition. H states that they are "preposively nasal" and writes them as *b̃, d̃, and g̃* ("Ethnogeography," 39). Word initially I hear no prenasalization at all. Word medially the dialect variation of stop vs. stop-plus-nasal (sec. 2.1.22) might lead one to consider the two segments as a prenasalized stop, but this can be handled as a simple cluster.

/b/ is bilabial [b], /d/ is apico-alveolar [d], /g/ is either dorso-prevelar [g̃] (before front vowels) or dorso-mediovelar [g] (before back vowels). Some speakers tend to spirantize /g/ intervocally in normal transition, so that it is actualized as [ỹ] or [y].<sup>12</sup>

As with H&D ("Phonemes of Tewa," 140), /r/ is listed here with the voiced stops, though it is an apico-alveolar single trill [r<sup>1</sup>], because of its close affinity to /d/ in morphophonemic alternation (sec. 3.3.111). H indeed states that "in many instances ɣ and ɟ should be ɟ, ɟ̄ and ɟ̄ [r<sup>1</sup>], ɓ̄ and ɓ̄ are respectively but two aspects of the same phonem [sic]" (Ethnozoology, x), but this is obviously a confusion of phonemics with morphophonemics.

Since /r/ does not occur in utterance initial position, its possibilities for contrast with /d/ are restricted to a position internal to the utterance. Actually, in "n-pronouncing" dialects (sec. 2.1.22) there may be no contrast between the two which does not involve morphophonemics (as noted above), stress and grammar (first syllables of roots are usually the stressed ones, and /r/ is never root-initial), or complementation in reference to a contiguous phone (/d/ occurs following /n/, /r/ never does). In "non-n" dialects there are few clear contrasts that do not involve some of the above factors, though there are some, e.g. xy'ri 'last night' vs. ɓa'di 'tomorrow'. It is not implied, of course, that grammatical conditioning per se is a valid criterion for combining phones, or that morphophonemically derived contrasts are not valid for separating them; but the foregoing points are made to show that the r--d contrast has limitations of several sorts; and since Hopi-Tewa seemingly does not have the contrast, this information should be of value in comparative work.

2.3.312. Voiceless stops /p, t, k, k<sup>w</sup>, and ʔ/ are relatively fortis. HAD state the first four to be slightly aspirated and "pronounced with a markedly greater explosive force than the voiceless stops of English" ("Phonemes of Tewa," 140). I do not find them to be quite as explosive as described, and I find only /k/ and /k<sup>w</sup>/ to be aspirated, these approximately as in English. H describes all voiceless stops as unaspirated (Ethnology, ix).

/p/ is bilabial [p]. /t/ is apico-dental [t̪]; HAD describe it as apico-alveolar ("Phonemes of Tewa," 140). /k/ is, like /g/, fronted before front vowels and so becomes dorso-velar [k̟], but before back vowels is dorso-mediovelar [k]. /k<sup>w</sup>/ is dorso-mediovelar labialized [k̟<sup>w</sup>], with the labialization following the stop release. /ʔ/ is glottal stop [ʔ]. For syllable-final glottal stop, see secs. 2.3.4 and 2.4. HAD also list a t<sup>y</sup>, limited to one morpheme t<sup>y</sup>u: 'younger sibling' ("Phonemes of Tewa," 140). In a later publication, however, Dezier spells this as tiyu: ("Kinship among the Arizona Tewa," 245, 253), which would be in accord with my analysis.<sup>13</sup> Actually, it is sometimes difficult in rapid speech to distinguish /t<sup>y</sup>/ from /t<sup>w</sup>/.

2.3.313. Glottalized stops p<sup>ʔ</sup>, t<sup>ʔ</sup>, k<sup>ʔ</sup>, k<sup>wʔ</sup>/ are at the same points of articulation as the voiceless stops, save that /t<sup>ʔ</sup>/ is apico-alveolar instead of apico-dental. They range from fairly lenis to moderately fortis, depending on the speaker. The timing of the glottal release is,

as H&D state it ("Phonemes of Tewa," 140) simultaneous with the oral release in rapid speech or succeeding it in slow speech, with the labialization of /r<sup>w</sup>/ following the glottal release in all cases.

### 2.3.32. Affricates.

2.3.321. Voiceless affricates /c/ and /č/ are grooved apico-alveolar [c] and frontal-mediopalatal [č] respectively. They are relatively fortis and both aspirated to about the degree of English initial /č/. H&D refer to /č/ as "blade-alveolar," and in addition describe it as unaspirated ("Phonemes of Tewa," 141-2). Their description of tongue position is particularly inaccurate. H describes both as unaspirated and lenis--/c/, indeed, as "very lenis" (Ethnozoology, ix).

2.3.322. Glottalized affricates /c<sup>ʔ</sup>/ and /č<sup>ʔ</sup>/ are the glottalized counterparts of /c/ and /č/, with the degree of fortisness the same as for the glottalized stops.

2.3.323. Voiced affricate /j/, found only in the SC dialect (see. 2.1.21), is lenis frontal-mediopalatal [j].

### 2.3.33. Spirants.

2.3.331. Grooved spirants /s/ and /š/ are apico-alveolar [s] and frontal-mediopalatal [š] respectively.

### 2.3.332. Slit spirants.

2.3.3321. Voiceless slit spirants /f, θ, x, x<sup>w</sup>, h/ are actualized phonetically as follows:

/f/: ranges from heavily aspirated bilabial stop [p<sup>h</sup>] to bilabial fricative [ɸ] or labiodental fricative [f].



H&D claim the last mainly for younger speakers ("Phonemes of Tewa," 141), though I have not noticed a direct correlation.

/θ/: from heavily aspirated apico-dental stop [t<sup>h</sup>] to apico-interdental fricative [θ].

/x/: from heavily aspirated dorso-mediovelar backed stop [k<sup>h</sup>] to fricative [x] at the same point of articulation.

The variants of /f, θ, x/ usually depend on dialect, but some speakers vary (freely?) within their own pronunciation of these. H mentions only the stop variety (Ethnology, ix, x), H&D only the fricative ("Phonemes of Tewa," 141-2).

/x<sup>w</sup>/: The onset varies dialectally from smooth glottal h to back velar fricative (sec. 2.1.27); labial release follows the fricative. Actually, since there is no contrast between [h<sup>w</sup>] and [x<sup>w</sup>], this phoneme could presumably be written either way. The assignment is made here to /x<sup>w</sup>/ since, even for those who use [h<sup>w</sup>] the preponderance of the time, there is some free variation to velar friction, especially before /a/ and /ae/.

H has only one phoneme here also. H&D seem to have found contrast in Dozier's speech, but claim that h<sup>w</sup> is rare ("Phonemes of Tewa," 142); and though they give teh<sup>w</sup>á (incorrectly indicated as téh<sup>w</sup>àh) 'house' as one of two examples, Dozier later writes tex<sup>w</sup>a ("Verb Structure," 124).

/h/: relatively frictionless glottal [h] syllable initial, ~~more~~ friction syllable final. In both positions its

quality is affected by the vowel within the syllable. For further discussion of syllable-final /h/, see sec. 2.3.4.

2.3.3322. Voiced /v/ may be actualized as either bilabial fricative [β] or labiodental fricative [v], depending on the speaker (as with /f/). H lists only the bilabial type (Ethnocoology, ix).

/v/ stands in a relation to /b/ much like /r/ to /d/-- never utterance initial, never root initial, in morphophonemic alternation with /b/ in certain suffixes and in verb prefixes, in complementary distribution with /b/ in reference to nasals. Hopi-Tewa again evidently lacks the contrast.

2.3.34. Nasals. The nasals are /m, n, n/. /m/ is bilabial [m], /ñ/ is frontal-mediopalatal [ñ]. H&D describe this as n<sup>v</sup> or palatalized n ("Phonemes of Tewa," 141). /n/ occurs with the following allophones: apico-alveolar [n] syllable initial, and syllable final preceding dentals, alveolars, and palatals (provided that no external transition occurs following the n); dorso-mediovelar [ŋ], in environments other than the preceding. H describes ŋ as somewhat palatal in "absolute auslaut and before h and ?" (Ethnobotany, xi).<sup>14</sup> I have encountered only two speakers, one from SJ and the other from N, in whose speech this is the case.

The interpretation given for /n/ disagrees with both that of H and H&D. Since a Tewa syllable (sec. 2.7.1) may be either initiated or closed by a nasal consonant, we may represent one type of syllable by N<sub>1</sub>VN<sub>2</sub>, in which N<sub>1</sub> may be

[m], [n], or [ñ] and N<sub>2</sub> may be [m], [n], or [ŋ]. Theoretically there is no limitation in the occurrence of N<sub>1</sub> (actual limitations by reason of non-occurrence before specific V being irrelevant to this discussion). N<sub>2</sub>, partially described above, is more specifically [m] preceding labials, [n] preceding dentals, alveolars, and palatals (in the case of both [m] and [n], provided that they do not precede an external transition), and [ŋ] preceding velars, glottals, /w/ and external transition.

H lists n, n, and ñ as phonemes, presumably on the basis of their contrast syllable initial, but then lists ŋ as a fourth phoneme with allophones ŋ, ñ, n and m (Ethnebotany, xi), a sort of Praguian archiphoneme.

H&D modify this, agreeing with the initial contrasts, but calling syllable-final [m], [n], and [ŋ] allophones of /n/, ("Phonemes of Tewa," 141), a type of overlap.

The interpretation assumed here assigns [m], wherever found, to /n/, [n] and [ŋ] to /n/, as described above; and of course, [ñ] to /ñ/. Note that [ŋ] and [ñ] are not united, even though they are phonetically closer to each other than [ŋ] is to [n], for morphophonemic reasons (secs. 3.3.113 and 3.3.211).

2.3.35. Semivowels /y/ and /w/ are phonetically [j] and [w]. H&D list these as frictionless spirants (Phonemes of Tewa, 141). When they initiate a syllable that contains a phonetically nasal vowel, they assume a nasal quality also. This is undoubtedly what led H to set up his ŋ<sup>w</sup> pho-

neme, e.g. *ɲwæny* for /wæɲ/ 'pine tree' ("Ethnogeography," 80)--though he writes *wɔŋɔ* 'together', *wɔ̃* 'wind', etc., and also does not distinguish between his *ɲw* phoneme and an actual *ɲw* sequence, as in his *pʲɪɲwari* 'wide gap in the mountains' (*pʲɪɲ* + *wari*) ("Ethnogeography," 84) vs. his *toɲwɔ* 'hotness, hot' ("Ethnogeography," 87).

2.3.4. Residual phonemic problems. Two problems<sup>15</sup> that await an adequate solution are the status of syllable-final glottal stop and voiceless vowel offglide. There appears to be a complex relationship between the phonology of transition phenomena and stress (partially dealt with in secs. 2.6.2 and 2.6.5), and following consonant and vowel quality on the one hand, and morphological factors involving morphophonemes, words, and phrases on the other.

2.3.4.1. Voiceless offglide. One difficulty with the voiceless offglide is that a phonetic scale of degrees of its presence can be established, ranging from zero to quite pronounced, with a fair amount of variation in some positions, depending on the speaker. Its manifestation seems to be greater with lower vowels than with higher. With regard to following consonant, it may occur preceding voiceless stops and affricates, sibilants, and velar fricatives; and before some of these contrast can be established between its heaviest manifestation and its virtual<sup>16</sup> absence. Examples are given phonetically with the heaviest degree of offglide indicated by a plus under the vowel devoicing sign (inverted v). It should be understood, however, that though

the focus is on the inter-syllabic spot, that there is also a degree of offglide on the final open syllable of each form.

<u>heavy offglide</u>		<u>absence of offglide</u>	
'jaw'	?saxú	'foam'	?oxó
'all'	t'ææekí	'candle'	fakó
'buck deer'	pææesen	'hip'	púsen
'buck ante- lope'	t'oosen	'I smell'	?osun
'pie'	paatê:	'it is lack- ing'	naté:

The forms for 'all', 'pie' (< Spanish pastel), and 'foam' are monomorphemic. The others are bimorphemic, e.g. 'buck antelope' consists of t'on 'antelope' and sen 'male'; 'I smell' of prefix ?o- 'I' plus verb base sun 'to smell' (the stress on verbs is discussed in sec. 2.6.5). Note the parallel phonological structure from which 'buck deer' and 'hip' derive: pæ: 'deer' plus sen'male', and pú: 'buttocks' plus sen 'horn'.<sup>17</sup> However, a combination of 'deer' plus 'horn' yields a pattern which is neither like 'buck deer' (long V > short V plus offglide) nor like 'hip' (long V > short V), but simply pæ:sen; and k'úwá 'sheep' plus either 'male' or 'horn' yields homophonous forms, k'úwásen 'ram' and k'úwásen 'sheep horn'. Thus there is the possibility of morpheme classes established on the basis of the type of change which they evidence--but only among certain syllable or stress-pattern types.

Phonemic status is accorded the heaviest degree of offglide, which is in contrast with its absence. Other degrees which have either a measure of predictability or are

in free variation are considered non-phonemic. Thus the phonetic examples given above would be phonemicized:

'jaw'	/ʔhry/
'all'	/tʔehki/
'buck deer'	/pʔehsen/
'buck antelope'	/tʔohsen/
'pie'	/pahtô:/

The examples with absence of offglide would, of course, show no change except for final [ŋ] to /n/.

H speaks of <sup>h</sup> which he calls "audible breath," as well as "h (harsh laryngeal h)," <sup>h</sup> occurring before the phonemes that we have specified above plus ʔ and ʔ ("A Brief Description," 498). Elsewhere he says, "The vowels are breathy, and unless followed by the glottal stop, a glottalized stop, or a voiced sound, an aspiration is distinctly heard toward the end" (Ethnology, ix). He perhaps inadvertently overlooked the inclusion of /h/ in this list.

H&D simply state that /h/ occurs both syllable initial and syllable final. They sometimes write it and sometimes do not, but always indicate it phonemically in utterance-final syllables. In one case, at least, they write it utterance medially in a form in which I would say the offglide is at its weakest, viz., their híhë: 'happiness' ("Phonemes of Fowa," 142).

2.3.42. Glottal stop. In a more limited environment,<sup>18</sup> namely syllable-final before glottalized stops, there are parallel problems to those outlined for the voiceless off-

glide, specifically with reference to the interweaving of possible conditioning factors and to the range of manifestation from very lenis (if not actually absent) to quite fortis. An example of the most fortis would be:

[naʔáʔkʔwó]	'there are bows'
of medial degree:	
[dixowʔkʔwó]	'there are grasshoppers'
of lenis to none:	
[ditʔowakʔwó]	'there are people'

In these the medial degree is phonemicized because of its contrast with the last, and the heavier degree is considered phonemically equivalent to the medial degree, the difference attributed to greater stress on a monosyllabic root than on the second syllable of a disyllabic root (sec. 2.6.5). Thus:

/naʔáʔkʔwó/	'there are bows'
/dixowʔkʔwó/	'there are grasshoppers'
/ditʔowakʔwó/	'there are people'

Neither H nor H&D deal with the matter. It is of interest to note, however, that while H&D list a form meaning 'he has chewed it' as ʔiʔokʔávèh ("Phonemes of Tewa," 141), Dozier later inserts a glottal stop before the glottalized stop: ʔiʔəʔkʔávèh ("Verb Structure," 121).

2.3.5. Examples. All consonants are exemplified, where possible, before oral /a/ both word initial and word medial (all cases assuming, for morphophonemic purposes, that the word is in isolation). Where examples with /a/ are not possible within the limits of a word, nasal /ǣ/ is used. In

the few cases where even this is not possible, another vowel is substituted. SC /j/ is not separately exemplified, but can be substituted for /y/ in examples listed for that phoneme.

	<u>Word initial</u>		<u>Word medial</u>	
/b/	básege	'sit down (dual)'	nabâ:	'he's lazy'
/d/	damaen	'they're going (dual)'	nada'	'he wants'
/r/	(never initial)		herá	'and'
/g/	gamaen	'we're going (dual)'	pu:gâ:	'wild goose'
/p/	pa:	'fish'	dópa:	'I made it'
/t/	ta:	'elk'	dóta:	'I know him'
/k/	ka:	'leaf'	dóká:	'I overtook him'
/k <sup>w</sup> /	k <sup>w</sup> a:tára	'stepfather'	dók <sup>w</sup> iye	'I irrigated it'
/ʔ/	ʔa:	'clothing'	naʔá	'it's sweet'
/pʔ/	pʔá:	'crack'	napʔá:	'it's cracked'
/tʔ/	tʔa:ʔi'	'dry'	dótʔá:	'I ground it'
/kʔ/	kʔa:ʔi'	'thick'	nakʔá:gi	'it's delicious'
/k <sup>w</sup> ʔ/	k <sup>w</sup> áʔa:	'beads'	dók <sup>w</sup> óri	'I set them down'
/c/	cáwáé	'blue/green'	nacaʔan	'it's cut'
/č/	čəe'	'money'	načá	'it's set down'
/cʔ/	cʔəe:	'white'	docʔá:	'I cut it'
/čʔ/	čʔún	'warlike'	ʔičʔá:	'he threw it away'
/j/	(see /y/ and sec. 2.1.21)			
/s/	sa:	'tobacco'	dósa:	'I served it'
/š/	šare	'dance'	dóša:	'I found him'



/v/	(never initial)		nava	'field'
/f/	fa:	'fire'	dófare	'I passed him'
/e/	ea:	'day'	naCa:	'he lives (dwells)'
/z/	ma:	'corral'	nazá:	'it's heavy'
/x <sup>w</sup> /	x <sup>w</sup> á:gó	'home'	tox <sup>w</sup> á	'house'
/h/	hada	'liver'	dóhánu	'I spent it'
/n/	man	'hand'	dóna:	'I brought it'
/n/:	na:	'I, me'	nazá	'it is (time/ place)'
/ñ/	ñæn	'nest'	dóñánde'	'I'm fighting'
/w/	wá:	'egg'	dówáre	'I scattered it'
/y/	yá'wé	'outside'	dóyámú	'I turned it over'

2.4. Laryngealization. Under sec. 2.1.2i3 there was noted a contrast, for some speakers, between reduplication of vowel after glottal stop in some positions and lack of such reduplication under analogous conditions elsewhere. This was referred to as "echo vowel," since the reduplicated portion does not have the same phonetic status as a full vowel, but is rather a short, often partly devoiced vocalic release (indicated by raised vowel) after the glottal stop, of the same quality as the vowel preceding the glottal stop. V?<sup>v</sup> (with the small raised <sup>v</sup> representing the echo vowel in formulae) is also to be found in contrast with a V?V sequence:

<u>echo vowel</u>	<u>full vowel</u>
[náke?°]	[naðe?en]
'get it'	'it is plucked'
[?i?¹]	[?i?ísége]
'3rd person'	'he straddled it'
[?im?²wan]	[?ito?owaen]
'he sang'	'he was donning his shirt'

Further, there is contrast between the following types of sequences: [V?V], [V?V], [V?V], and, for the speakers mentioned in 2.1.213, [V?V]. Examples are:

'he likes it'	[?ó:h{?an]	(=V?V)
'it's a song'	[na?²ân namu:]	(=V?V)
'he's sitting singing'	[nana?²aen]	(=V?V)
'he washed the thread'	[?ipq?owíri]	(=V?V)

To account for the various contrasts outlined, the glottal stop alone is not sufficient; therefore a phoneme of laryngealization represented by apostrophe (/°/) is added. Thus the examples from 2.1.213 and those above would be written phonemically as follows:

'money'	/čæ?°/
'he's coming'	/na?qo°/
'cross'	/fé?wan/
'someone'	/to°wí/
'thread'	/pə?°/
'he's making it'	/?ipa°/

'get it'	/náke°/
'it is plucked'	/naðeʔen/
'3rd person'	/ʔi°/
'he straddled it'	/ʔiʔísége/
'he sang'	/ʔiɾa°wan/
'he was donning his shirt'	/ʔitoʔowæn/
'he likes it'	/ʔó:híʔan/
'it's a song'	/za°ân namu:/
'he's sitting singing'	/naxa°ʔaón/

It will be noted that all examples of /V°/ so far have been with low tone. There is actually a three-way contrast between [V̄?V̄], [V̄?V̄], and [V̄?V̄]:

<u>V̄?V̄</u>	<u>V̄?V̄</u>	<u>V̄?V̄</u>
[bé?°]	[náké?°]	[ʔiké?°]
'corner'	'get it'	'he got it'
[nú?̄]	[náɾ?̄ú?̄]	[ʔiɾ?̄ú?̄]
'near'	'lay it'	'he laid it'

These are phonemicized:

'corner'	/bó°/	'near'	/nú°/
'get it'	/náké°/	'lay it'	/náɾ?̄ú°/
'he got it'	/ʔiké°/	'he laid it'	/ʔiɾ?̄ú°/

H states, "Vowels are glottally broken in two ways:

(1) The glottis is instantaneously closed when about half the vowel has been pronounced, written, e.g., a'a; (2) The glottis is instantaneously closed when about three quarters

of the vowel has been pronounced, written, e.g., a<sup>h</sup> ( "A Brief Description," 498). I find no contrast between the two, however, in the examples found in a short text that he later appends, all instances simply being cases of /V<sup>h</sup>/

H&D claim that "in final high toned syllables with a long vowel, the vowel is pronounced as an identical diphthong: ?ún-pó: [?ún-pó:<sup>h</sup>] it happened to him. Similarly, final high short vowelled syllables closed with a glottal stop are frequently pronounced with an echo vowel: bú? [bú?<sup>h</sup>] town, market place, plaza" ("Phonemes of Tewa," 143).

Their first case I hear simply as length, no different in this respect from low-toned long vowels. There are some verb forms whose progressive mode (sec. 3.4.222) is formed by glottal stop plus identical vowel with high tone, e.g. dóóé:?<sup>h</sup> 'I'm plucking it', dókí:?<sup>h</sup> 'I'm setting it down' (also a few habitual forms sec. 3.4.221 in SC with similar patterning, only with low tone, e.g. nanae:?<sup>h</sup> 'he habitually goes'); but the example given by H&D is not one of these.

Their second case is, as I have it recorded, bú:?<sup>h</sup>. If in Dozier's idiolect the shorter vowel in fact does occur, the form would of course be phonemicized here as /bú<sup>h</sup>/.

Other examples given by them show that they do not recognize the difference between /V<sup>h</sup>/ and /V̂<sup>h</sup>/; e.g., their ?imú?<sup>h</sup> 'he saw it' ("Phonemes of Tewa," 143) is not \*[?imú?<sup>h</sup>] but [?imú?<sup>h</sup>] (/?imú<sup>h</sup>/), their ?ic<sup>h</sup>?á? 'he cut it' ("Phonemes of Tewa," 141) not \*[?ic<sup>h</sup>?á?<sup>h</sup>] but [?ic<sup>h</sup>?á?<sup>h</sup>] (/?ic<sup>h</sup>?á<sup>h</sup>/).

Elsewhere, likewise ("Verb Structure," passim), Bozler does not make the distinction. Further, the eehe vowel is mentioned only for high toned syllables, but its occurrence with low tone is not mentioned.

Finally, H&D do not deal with the difference between /V<sup>0</sup>/ and /V<sup>?</sup>/ internally.

2.5. Nasalization. There is a phoneme of nasalization, /,/, the distribution of which is described in sec. 2.2.2. Clear contrast between nasalized and oral vowels is established in such a minimal pair as ka: 'leaf' and kã: 'lard'. Though in actuality there are few such completely minimal pairs, many other non-minimal contrasts could be given, e.g. dóhu: 'I closed it', ?otú 'I said'; ?ó:hí?an 'he likes it', ?ó:hí:ʔan 'he spoke to him'. As stated in sec. 2.2.2, the only contrasts not found are [o:]--<sup>o</sup>[ø:] and [e:]--<sup>e</sup>[ɛ:]. As with length (sec. 2.6.3), the extraction of nasalization as a phoneme is preferred to the setting up of a new series of nasalized vowels, as in both E and H&D.

There is also, however, a lesser degree of nasalization of vowels in syllables initiated by nasal consonant, and a still lesser degree in syllables closed by nasal consonant or in an open syllable followed by a nasal consonant in normal transition. Since this nasalization is (1) predictable and non-contrastive in these positions, and (2) not of the same degree as the contrastive type mentioned, it is to be considered non-phonemic. Examples given phonetically and

phonemically follow, with plusses indicating increase in degree of nasalization:

'leaf'	[ka:]	/ka:/
'prisoner'	[pqa]	/pa:n/
'1st person'	[nq+:]	/na:/
'lard'	[kq <sub>++</sub> :]	/kq:/

Because of the complexity of differentiating these in all cases of phonetic representation, only the heaviest degree is marked elsewhere (as  $\bar{y}$ ) in this study.

Both H&D and H seem to indicate nasal-oral contrast in syllables that begin and/or end with nasal consonant, though H writes vowel nasalization in the large majority of such contexts. Dozier, however, in a later article ("Verb Structure") is inconsistent in this regard, e.g. ?i-mægeh 'he gave (it)' (121) vs. ?ó:-píje-mægeh 'he was loaned (an object or objects)' (123); ?ôa-tà: 'his (what belongs to him) are known (by others)' vs. ?ôa-té: 'it was chosen for him' (122). Also, between articles there is inconsistency: ?i-mú? 'he saw it' ("Phonemes of Tewa," 141) vs. ?i-mú? ("Verb Structure," 121).<sup>19</sup>

## 2.6. Transition, length, pitch, and stress.

2.6.1. Introduction. Although the accentual systems of Kiowa and Tewa differ in detail, they seem to present difficulties that are similar enough to warrant using the following quotations in extense from Sivertsen, "Pitch Problems in Kiowa," as an introduction to a discussion of Tewa stress, pitch, length, and transition.

(1) It has generally been assumed, in register-tone languages, that though the postulated pitch levels are in no way absolute and unchangeable, various manifestations of the same tone in one short utterance, at least, will show only minor differences in terms of absolute pitch levels. This is not the case in Kiowa. There is a considerable drift downward in a succession of the same tones, particularly of high tones, and there are also other marked phonetic variations of the tones within one utterance. These variations can be shown to be conditioned by environment . . . but they are bound to make recognition of any tonal system, and of a limited number of tonemic levels difficult in the initial stages of the analysis. (117)

The variation in terms of fundamental frequency of one phonemic pitch level may be considerable, more so than has been observed in languages so far. In Kiowa it is the downward drift throughout the utterance which is most noticeable. (130)

(2) The suprasegmental features of laryngealization, length, stress, and pitch are singularly interwoven in Kiowa. It is difficult to study any one of them in isolation, and to find pairs of utterances which are distinguished by one of these features only: If there is a pitch difference, there is commonly also a difference in length, or stress, or in presence or absence of laryngealization, and vice versa. (117)

There may be languages where the suprasegmental features are so much interwoven that it is only by fairly complicated statements one or more of them can be predicted in terms of one or more of the others. (130)

(3) An open vowel is generally more stressed than a close one . . . A /high/ syllable is in general more stressed than a /low/ one . . . A /high + low/ syllable has usually more stress than either /high/ or /low/ syllables . . . A long syllable is generally more stressed than a short one . . . When a /high/ or a /high + low/ tone is combined with length the stress is particularly marked . . . An open syllable is commonly more stressed than a closed one . . . The final syllable in a breath group, when following a syllable of the same tone, is less stressed than the preceding one . . . The various factors may conflict in their stress conditioning, and there is then more fluctuation in stress. However, the /high/ tone will commonly be accompanied by stress under most conditions . . . Though these are tendencies which seem to prevail

statistically they are by no means absolute rules, and we find a great amount of free fluctuation [italics mine] . . . Two utterances of the same word may show different stress patterns. (125-6)

(4) In the material collected for this paper the utterances are of limited length. It is conceivable that in connected speech there might occur such a long string of /high/ syllables that a break upwards in the downward drift would be likely, e.g. to bring out certain parts of the utterance. The point where such potential breaks occur are probably determinable in terms of morphological and syntactical borders. (124)

An analysis of emphasis and intonation is required before the tonal analysis of Kiowa can be completed, inasmuch as the tonemes may be expected to vary in phonetic actualization and possibly also in distribution in reference to these other matters. (130)

The main points of the above paragraphs, then, are: in (1), considerable variation in tonemes, caused by downward intonational drift; in (2), variation caused by other suprasegmental features; in (3), several examples of (2); and in (4), necessity for a complete study of transition phenomena. These points are generally valid also for Tewa. Because stress, pitch, length, and transition are interwoven, they must be discussed together; but also because of the complexity of the problem, the following does not pretend to be complete, but is offered as a preliminary description of the more salient features. At this stage of analysis we posit two transitions, two lengths, three tones, and two stresses (or one stress with contrastive placement).

2.6.2. Transition. A stream of speech in Tewa may be divided into a series of contour segments which terminate in an external transition, which we will mark with a double cross (/#/). Within each of these contour segments there



may be one or more internal transitions, symbolized by plus (/+/).

2.6.21. Contour segments. The exact span of material that can be included in contour segments is as yet unknown, as are the limits of their morphological content. Phonologically, they have the following characteristics in general:

(1) The initial syllable is fairly high in pitch, with phonemic low tone being specially high (but still contrastive with high tone).

(2) The succeeding pitch contour shows a marked overall downward drift caused by three factors: (a) one of the largest drops in pitch occurs when a phonemic high tone follows a phonemic low or glide tone, the high in this position being markedly lower in absolute pitch than any preceding high; (b) a relatively large drop in pitch occurs also when a low tone follows a high; a series of highs and lows, combining (a) and (b), thus cause a rapid drop in the total pitch pattern; (c) a smaller drop generally occurs on an unstressed low which follows another low; and even though a stressed low usually rises slightly, it will not attain the level of a previous stressed low.

(3) A final syllable of the contour segment which is ordinarily low because of any of the preceding, will be still lower in pitch than it would be were it contour-segment medial (in fact, a few cases have been observed in which a final high following a glide is actually lower than

the end point of the glide); in addition, the raising of pitch for the stressed low, mentioned in (c), does not ordinarily occur; and lastly in reference to pitch, in a succession of high tones (described below in 4), the final syllable is generally lower than the preceding high.

Other features of the final syllable include a decrescendo which often leads to virtually complete devoicing. For CVN<sup>20</sup> type syllables, particularly those with a glide tone, there is often a barely perceptible articulation of the [ŋ]; for CV syllables there is usually a voiceless offglide of the same quality as the vowel (sec. 2.3.41), more obvious for short than for long syllables, and more obvious for stressed than for unstressed. Syllables of type CV<sup>0</sup> likewise show the voiceless offglide, even when the rearticulation includes a fair amount of voicing. CV? syllables do not seem to share the devoicing of the others, but these are more rare in contour-group final position.

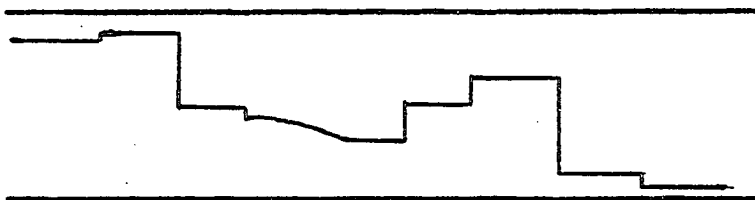
(4) Working contrary to the general downward drift, besides the stressed lows following unstressed lows, an internal succession of high tones may show a slight upward movement of pitch with no seeming concomitant involvement of stress factors. This upward drift is specially noticeable when a high syllable is followed by a verb with a high toned prefix, and may continue to the first syllable of a high toned verb stem. It is also often noticeable in high toned two- and three-syllable vocabulary items, in which the first syllable is usually stressed but often

slightly lower in pitch than the ensuing unstressed syllables.

The following examples are written phonemically save for stress. The graph-like line enclosed between horizontal lines indicates the phonetic pitch level for each example.

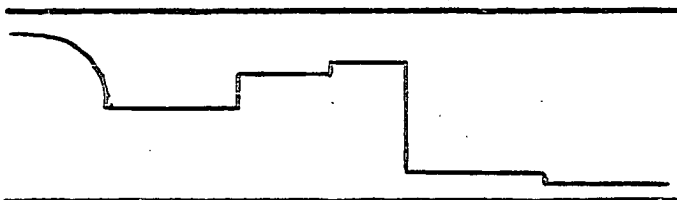
'I'm stronger than you'

š á n k í ? o k e : + ? u v í ? w e r i #



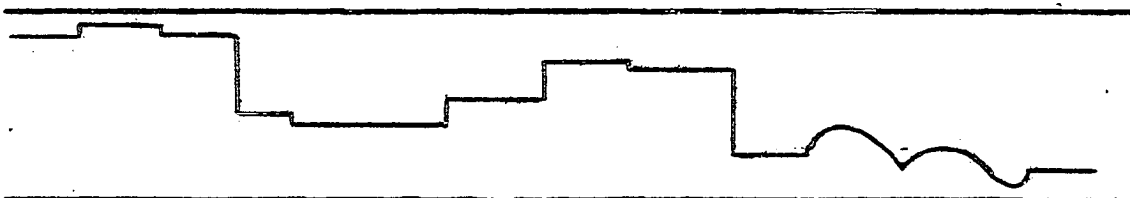
'What else did you do?'

h â n n a n + w í y á n a e n ? a n #



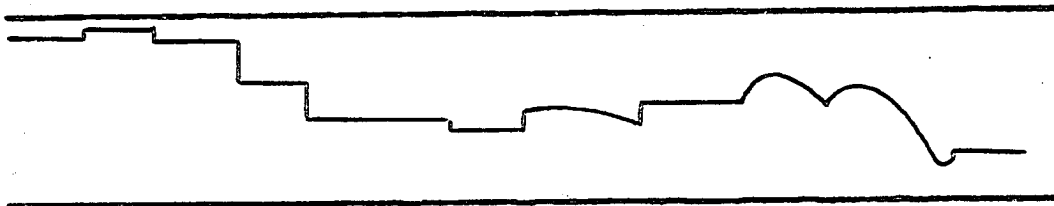
'give them as much as they ask for (want)'

g á h á e ñ ú r i d a ? + ? i h á e ñ ú + ? o v ê : n á e : n í #



'give them as much as they ask for (want)'

g á h a é ĩ ú r i d a ? + ? i h o : + ? o v ô : n a ê : n í #



An obvious difference between Kiowa and Tewa is the reversal between high and low tone of influence on downward drift. In Kiowa it is the high tones that drift rapidly downward, the low tone tending to be more stable; in Tewa the opposite. The biggest relative drops in Tewa, however, occur where low follows high or high follows low.

2.6.22. Plus transition is distinguished from its absence, or normal transition, in that the former shows more complete release of a phone, usually accompanied by a slight pause, before the onset of a following phone. There is also a tendency toward a slight lengthening of the nasal consonant of CVN type syllables before /+/, or a more obvious voiceless vowel offglide of a CV type syllable similar to that occurring before /#/ , especially if the syllable is accompanied by heavy stress. In addition there is a more fortis or accelerated onset to the syllable following the /+/. As with /#/ , the complete function of /+/ is as yet unknown; but it has at least been observed to contrast what might be called compound words with modifier-plus-noun constructions:

wâm+be:	vs.	pânte
'a couple of apples'		'outdoor oven'
sî+xowa	vs.	sîxowa
'six skins'		'onion skin'

It has also been observed between phrasal elements:

?isendó + pywqe?i?iwe?imunde' 'the old man is looking in the mirror' (sendó 'old man'; pywqe?i' 'mirror')

vs.

?isendópwyqexê:má: 'I'm going to look at the man'  
(sen 'man'; dópwyqexê:má: 'I'm going to look at him')

It is to be admitted, however, that /+/ transition is difficult to recognize in a normal stream of speech, that its presence does not seem to be always necessary in positions analogous to those illustrated, and that its frequency may be much less than might be expected a priori. Further, it is important to emphasize that some of the above discussion involving both /+/ and /#/ is stated in terms qualified by "generally," "usually," and the like. As with Kiowa, at times there seems to be a statistical norm but also a measure of free variation. It may possibly be that further analysis will demonstrate some of this seeming "free" variation to be systemically attributable, e.g., to further phenomena of transition, to another degree of stress, or, outside the linguistic system, to paralinguage. This caveat should serve for any other such qualified statements throughout the discussion of length, pitch, and stress.

Neither E (understandable so) nor HAD deal with transition phenomena. Although Yegerlehner includes a + and # in his "symbols,"<sup>21</sup> his # simply marks "initiation of speech activity, termination of speech activity, and open transition with pause longer than that associated with +" (Arizona Term I: Phonemes,<sup>22</sup> 2).

2.6.3. Vowel length. Contrasts between two lengths of vowels were illustrated in sec. 2.2.4. Phonetic variations within each vowel length can be attributed to paralinguistic, position in the contour segment, and stress.

Paralanguage is by far the greatest conditioner of length, not only in general effects through clipping and drawling, but in the extension of specific vowels for an unusually long duration. These cases are ordinarily associated with the description of far distance, intensity, etc., or with some commands. With the last mentioned, the length can even occur on an echo vowel. In the following examples, a series of colons indicates this paralinguistic length (with some attendant lengthening of the nasal consonant of a CVN syllable).

	<u>phonemic</u>	<u>ordinary phonetic</u>	<u>paralinguistic</u>
'over there'	/ʔowe/	[ʔowe]	[ʔo:::we]
'very'	/hânho/	[hânho]	[hâ:::n:ho]
'come!'	/ʔókæ:/	[ʔókæ? <sup>23</sup> ]	[ʔókæ?æp:::]

Conditioning of length in the final syllable of a contour group has been described in sec. 2.6.21.

Vowels with heavy stress seem to be of slightly longer duration than those with lighter stress, though this is by no means always clear and would bear confirmation by instrument analysis.

For contrastive length, however, three phonemic solutions are possible: (1) vowel gemination, (2) parallel series of short and long vowels, or (3) a phoneme of length.

Solution (1) is not chosen for the following reasons: (a) Since there is contrast between [V.V] (two syllable pulses, the period showing syllable division) and [V:], as in [ʔá.á] 'and a bow' vs. [tá:] 'grass', syllable division would also have to be enicized. (Thus: \*/ʔá.á/, \*/táá/) A more complete study of transition phenomena would be relevant to this particular point. (b) The general pattern of the language allows few vowel-vowel sequences, they being limited to cases in which /i/ or /a/ is the second member --and even these are restricted to a few specific morphemes (sec. 2.7.1).

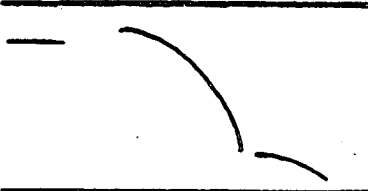
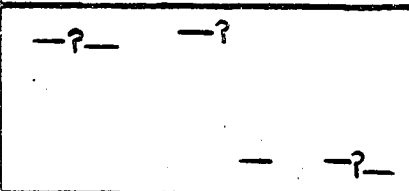
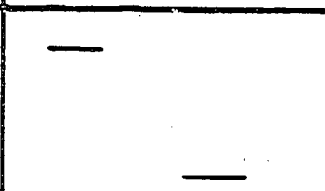
Solution (2), chosen by both H and H&D, is also rejected here because of the resultant multiplicity of phonemes.

Therefore solution (3), a phoneme of length (/:/), is deemed most preferable.

2.6.4. Pitch. The aspects of pitch to be dealt with in this section will be technically labelled "tone," following the general nomenclature for pitch which is lexically contrastive. Although there are many pitch levels in a contour group as previously illustrated (sec. 2.6.21), only

three phonemic tones, high, low, and glide, are deemed necessary to account for the actual contrasts involved as these are analyzed "vertically" or "paradigmatically" within any syllable slot. The rest of the pitch differences viewed "horizontally" or "syntagmatically" along the contour segment are either generally predictable or are in free variation.

Though high and low tones will be referred to as "level," in contrast to "glide," these are phonemic terms rather than phonetic. Actually only short V's in syllable types CV, CVh, and CV?, and high toned syllables of type CV: and CVN are level, though high CVN is occasionally heard with a slight upglide. The relative heights and movements of the tones in various syllable types are generally as follows:

high	glide	low	high	glide	low	high	low
							
CV: and CVN			CV?			CV, CVh, CV?, CV?N	

H&D state, "On the basis of stress and pitch accent it is possible to divide Santa Clara syllables into five types: high, middle, low, falling, and weak" ("Phonemes of Tewa," 143). Since their weak syllables are found only<sup>22</sup> at the ends of utterances, these can be accounted for as part of the features of /#/. Many of their illustrations



for mid tone can be accounted for as low tone which is initial in the contour segment. Other mids cannot be accounted for except by the possibility that their techniques for tone analysis did not involve the use of contrast only within a substitution slot.

Their analysis is suspect for two reasons: (1) It does not deal with the various factors that we have mentioned above (sec. 2.6.21) as affecting pitch. For example, their analysis does not recognize differential stress apart from the final weak stress already mentioned:<sup>23</sup> "Utterances which include syllables of the first four kinds [with the four tones] are pronounced with about the same stress on each syllable" ("Phonemes of Tewa," 143). Some rises in lows can be accounted for by stress, even as by initial position. (2) The mathematics of contrast possibilities militates against the third level tone. For one-syllable words, only the three contrasts described above are found within a frame, except for syllable types where only two contrasts exist. Tone contrasts in relation to syllable type in one-syllable words may be tabulated as follows:<sup>24</sup>

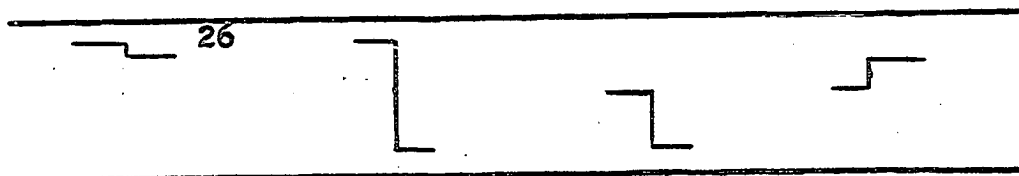
	CV	CV:	CVN	CV'
high	/fó/	/p'ó:/	/pín/	/bé'/
	'hair'	'moon'	'heart'	'corner'
low	/fo/	/p'e:/	/p'in/	/m'/
	'hole'	'water'	'mountain'	'song'

	CV	CV:	CVN	CV°
Glido	--	/pʔô:/	/wín/	/pʔî°/
		'road'	'mouse'	'red'

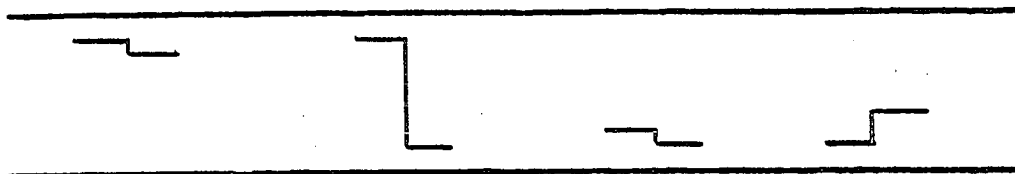
Within two-syllable words which involve level tone only, there would be a possibility of nine tone combinations if three levels of tone existed, namely  $\acute{\acute{S}}\acute{S}$ ,<sup>25</sup>  $\acute{\acute{S}}\grave{S}$ ,  $\acute{\acute{S}}\grave{\acute{S}}$ ,  $\acute{\acute{S}}\grave{\acute{\acute{S}}}$ ,  $\acute{\acute{S}}\grave{\acute{\acute{\acute{S}}}}$ ,  $\acute{\acute{S}}\grave{\acute{\acute{\acute{\acute{S}}}}$ . Even granting some limitations because of tonotactical restrictions, there should be more combinations than the four which would result from a two-tone system, namely  $\acute{\acute{S}}\acute{S}$ ,  $\acute{\acute{S}}\grave{S}$ ,  $\acute{\acute{S}}\grave{\acute{S}}$ , and  $\acute{\acute{S}}\grave{\acute{\acute{S}}}$ . The fact is, however, that only these four exist. Illustrations of these involving short CV syllables are:

$\acute{\acute{S}}\acute{S}$	$\acute{\acute{S}}\grave{S}$	$\acute{\acute{S}}\grave{\acute{S}}$	$\acute{\acute{S}}\grave{\acute{\acute{S}}}$
/pává/	/sávè/	/nàná/	/ʔòrí/
'bread'	'Apache'	'aspen'	'steak'
/éíró/	/ʔéǎ/	/ɛʔóm/	/ɛʔwíyó/
'bird'	'deer'	'friend'	'old woman'

The relative phonetic levels of these in isolation would be approximately as follows:



In the frame /naví . . . / 'ny . . . ' they would be:



If other syllable types and glide tone were added, there would, of course, be a large number of combinations to illustrate.<sup>27</sup> The point is, however, that none of these yield new contrasts, though some additional allophonic details are involved.

Yegerlehner posits but two tones, high and low, for Hopi-Tewa. He eliminates the necessity for glide tone through vowel gemination on CV: syllables and by making syllable-final nasal a locus of tone contrast in CVN syllables ("Arizona Tewa Phonemes," 5). Thus his tone patterns on CVN syllables compared with mine (which agree in this respect with H&D) would be:

	<u>Yegerlehner</u>	<u>Speirs</u>
high	/cV́N/	/cV́N/
low	/cV̀N/	/cV̀N/
glide	/cṼN/	/cṼN/

Yegerlehner's interpretation has to commend it the fact that glide tone is eliminated. A possible objection to it is the resultant peculiar distribution of tone--on all vowels but on only one consonant; and in addition the fact that this consonantal tone contrast occurs only syllable fi-

nal, never syllable initial.

A more objectionable feature of Yegerlehner's analysis of pitch is the use of absolute intervals in determining phonemic tone:

If a span consists (a) of a single level or (b) of a downward progression in which each of the levels is separated from contiguous levels by intervals of less than a minor 3rd (three semitones) in size and in which the size of the interval between the UML [uppermost level] and the LML [lowermost level] is no more than four semitones, then the pitch relationships obtaining among the various Td [tone-bearing segments] do not provide sufficient information for deciding, in the case of (a), whether the pitches are to be identified as ' or ` ; or for deciding, in the case of (b), how many of the levels are ' and how many ` or whether they are all ' or all ` . It is necessary to make reference to the relative placement of the span as a whole within the speaker's normal voice range. If such sequences are placed relatively high, their pitches are identified as ' ; if such sequences are placed relatively low, their pitches are identified as ` .

When a span-length downward progression contains a gap between any of its levels of three semitones or more, or when the downward progression as a whole covers a pitch range of more than four semitones, then its UML is identified as ' . (6)

He continues in this vein for several more paragraphs.

This type of analysis is particularly objectionable because it confuses speech with music. It should be rather obvious that any paralinguistic squeezing or spreading of pitch levels would immediately invalidate a scheme wrought entirely from exact musical intervals.

Moreover, nowhere does he use stress, transition, general intonation contour, or free variation to account for any of the pitch differences.

Finally, his analysis is objectionable because it does

not employ the commutation principle, or contrast within a substitution slot, but rather tries to analyze the data "horizontally."

To make up for some of the deficiencies of analysis which are outlined above, Yegerlehner introduces subregisters  $\vee$  and  $\wedge$ , the exact phonemic status and ultimate function of which are not at all clear; and in addition resorts to counting syllables to determine certain distinctions:

In a four- or five-level non-final downward progression starting from a UML identified as  $\acute{}$ , and in a four- or five-level final but not initial downward progression starting from a UML identified as  $\acute{}$ , the transition between  $\acute{}$  and  $\grave{}$  is between the third and fourth levels or at the first step-downward of three semitones or more, whichever is first. (7)

H's tone analysis is summed up in the following:

The "tones" contain the elements of "pitch," "leap," and "duration." There are three "pitches": (1) sentence- or mid-pitch. (2) below sentence-pitch, and (3) high above sentence-pitch. There are two "leaps": (1) level or slightly rising, and (2) falling. As regards duration, there are two vowel lengths as noted above. ("A Brief Description," 498)

He illustrates his contrasts for several combinations of these elements, but my data are at odds with his in these respects: I have no "falling leap" connected with short vowels or high tone, and I have no mid-pitch. Length, of course, is handled here apart from tone.

2.6.5. Stress. The exact number of degrees of either phonetic or phonemic stress is as yet unknown. It is certain that H&D's claim in regard to equal stress for all syllables except the few extra-weak ones must be rejected, as

mentioned above (sec. 2.6.4). There are at the very least two main degrees of phonetic stress. For example, all two-syllable nouns of syllable pattern CVCV and tone pattern high-high or low-low show decidedly heavier stress on the first syllable than on the second--regardless of their position in the utterance, so that the weaker stress cannot be attributed to /#/ . Roots show heavier stress than do affixes if each is of the same syllable type and carries the same tone. Somewhat mitigating this differential, smaller variations in stress which depend on pitch and vowel length also occur, slightly stronger stress associated with higher pitch and greater length. Thus, while the tendency is for heavier stress to be found on the first syllable of a root, a tone pattern of low-high tends to weaken the stress difference and makes it harder to distinguish. This is in addition to contour-segment final position in which there is a continuum of variation from somewhat weak to a complete whisper.

Though all of the preceding is not completely definitive, contrastive stress<sup>28</sup> can be demonstrated on the basis of the data thus far given. For example, since heavy stress tends to fall on root-initial syllable, a two-syllable noun consisting of either a disyllabic root or a monosyllabic root plus a suffix carries a heavier stress on the first syllable. A two-syllable verb, on the other hand, is of necessity composed of a monosyllabic prefix and a monosyllabic base,<sup>29</sup> and the stress thus falls on the second syllable.

Of course, the more similar the words are in tone and in syllable type, the more adequately the contrast is demonstrated. Actually, because of the limitations on the syllabic structure and tones of the various parts of speech, it is difficult to find many completely satisfactory contrasts, specially if the examples are confined to words (as defined in sec. 3.4). In the following examples there are two forms which, because they are bi-radical,<sup>30</sup> are not simple words, but which serve as additional illustrations of contrast. Heaviest stress in each form is marked with a double quote before the syllable on which it occurs.

ǵ"ná	"téná
'you have it (time/place)'	'Keresan'
na"pówá	"agóyó
'he arrived'	'star'
dó"yánú	"púwéré
'I turned it over'	'chair'
dó"páve	"r"áfóri
'I chopped it'	'window'
na"maen	"saxaen
'he's going'	'cotton'
na"ná	"?oxí
'it is (time/place)'	'steam'

2.7. Phonotactics. A study of the totality of phonemic arrangements in any language must obviously be a tremendous task, involving everything from simple two-phoneme sequences to the longest stretches of speech known, with all

possible permutations and combinations of phonemes involved. Equally obvious, however, is the fact that a practical limit must be set in a study such as this. We will confine our description to syllable types and to consonant and vowel sequences as they relate to the syllable.

2.7.1. Syllable types. Various syllable types discussed or mentioned in above sections are recapitulated here:

CV	te	'wagon'
CV:	te:	'cottonwood tree'
CVN	pan	'prisoner'
CVh	œntê:	'grandfather'
CV?	pɛ?	'thread'
CV°	bé°	'corner'
CV?N	(na)mae?n	'(he) habitually goes'

In addition to these there are two more syllable types, V and VN. These derive from a list of five suffix morphemes<sup>31</sup>:

V	-ɨ <sup>32</sup>	potential node marker	dóbowái	'I'll finish it'
	-á	emphasizer	na:á	'I, indeed'
	-á	series marker	na:á	'and I'
VN	-ân	emphasizer	na:ân	'I, indeed'
	-an	question marker	hɛ:an (namu:) <sup>34</sup>	'what (is it)?'

The pitch placement of tones on these syllable types is exactly the same as though they were CV and CVN. However,



type V lacks low tone and nasalization, and type VN lacks high tone and nasalization (all but the last presumably simply because of the scarcity of actual forms involved). The only known restrictions involving suprasegmentals on the other syllable types are that CV, CVh, CV?, and CV?N syllables do not occur with glide tone (sec. 2.6.4); CVN and CV?N do not occur with nasal vowel (sec. 2.5), and CVh does not occur before external transition (sec. 2.3.4).

### 2.7.2. Phoneme sequences.

2.7.2.1. Consonant plus vowel. We have already illustrated occurrences of all consonants before /a/ (sec. 2.3.5). Chart 2 is designed to show occurrences of consonants before all vowel qualities, using as a base the examples given in H&D, "The Phonemes of Tewa." The chart is set up in the form of a matrix, the vertical vector listing syllable-initial consonants, the horizontal containing vowels which follow the consonants. Within each cell there is one of three notations: (1) A plus, +, indicates that H&D adequately illustrate the sequence and that I have checked their examples.<sup>35</sup> (2) Zero, 0, indicates that neither they nor I have found such a sequence. (3) Numbers refer to the list of words below the chart which either fill in gaps in H&D's material (the majority of instances), or which propose an alternative example with an explanation for its inclusion. These last are indicated by both plus and number.

Chart 2.--Consonant-Vowel sequences within the syllable.

	i	e	ae	u	o	a
b	+	+	ø <sup>a</sup>	+	+	+
ɓ	+	+	+	1	+	+
ɗ	+	+	2	+	+3	+
ɓ	+	+	4	5	+	+
p	+	+	+	+	+	+
t	+	+	+	+	+	+
k	+	+	6	+	+	+
k <sup>w</sup>	+	ø	+	ø	+	+
ʔ	+	+	+	+	+	+
pʔ	+	+	+	ø	+	+
tʔ	+	+	+	+	+	+
kʔ	ø	+	7	+	+	+
kʔ <sup>w</sup>	ø	ø	8	ø	+	+
c	+	+	9	+	10	+
č	ø	ø	+	+11	ø	+

<sup>a</sup>Some SC speakers use pubáe instead of puváe 'worm'.

Chart 2.--Continued

	i	e	ae	u	o	a
e?	+	+	+	+	∅	+
ē?	∅	∅	∅	+	∅	+
s	+	+12	+	+	+	+
š	13	+	14	+	∅	+
r	+	+	+	+	+	+
θ	+	+	∅	+	+	+
χ	15	+	+	+	+	+
χ <sup>w</sup>	16	+17	+	∅	18	+
h	+	+	+	+	+	+
v	+	+	19	∅	20	21
m	+	+22	+	+	∅	+
n	+	∅	+	+	23	+
ñ	+	∅	+	+	∅	+
w	+	+	+	∅	+	+
y-j	+	+	24	25	+	+

1. du:gi° 'protruding'. H&D give dũ:neh 'Monday' < Spanish lunes.
2. nahaʔraempó:<sup>36</sup> 'it spoiled'
3. wíróma:pí 'I don't have it'. H&D's example, ʔoronfé póvih 'bluebell', was unknown to the several informants with whom I checked it.
4. ču:gae: 'wild goose'
5. tigu 'I wonder'
6. ʔókæ° 'come here'
7. namakʔgemu: 'he has tangled hair'
8. kʔæʔæ: 'magpie (?)' (Given as a woman's name.)
9. ʔicæ° 'he's nursing'
10. condi° 'councilman'
11. naču: 'he died'. H&D's example, čun 'mock orange', was not known to my informants.
12. nakʔósé 'he's cold'. H&D give sénbé: 'cooking bowl', but this is saembé:
13. šiʔé: 'ladder' was obtained from a N informant. Other pueblos give šeʔé: (as do H&D for še).
14. šæ: 'wart'
15. ʔixiyé 'he created it'
16. xʔí: 'weeds, trash'
17. dóxʔéve 'I moved it with my foot'
18. xʔopæ° 'mattress'
19. puvaé 'worm' (SC pubaé). Or, ʔovâen- verb prefix<sup>37</sup>
20. sóvô: 'moustache'

21. nava 'field'
22. menúnde 'melon', though this is a peripheral example  
(see discussion under /ae/, sec. 2.2.3). H&D's example,  
napi:men 'he goes out' is napi:maen 'he is going out'.
23. yóno 'four'
24. yáe?maéngéí 'on the left side'
25. yû:su 'prayer'

Notes on the above:

(a) Some combinations are rare; e.g. /du/ is attested in just this one example in my data, plus búdu 'donkey' in "non-n" dialects. Some consonants are in themselves rare: /č?/ has been found in but three words.

(b) Because of dialect problems involving /j/--/y/ and /ñ/--/yŷ/ (secs. 2.1.21 and 2.1.26), contrasts of /y/ vs. /ñ/ are particularly difficult to establish.

(c) Some of the gaps appear to be fairly patterned, viz., the lack of /w/ or labialized segments before /u/; the possible lack of nasals preceding /e/; and of the five palatals, the non-occurrence of all but /y/ before /o/. Other gaps seem random.

2.7.22. Vowel plus final consonant. Consonantal syllable termini, as noted in 2.7.1, are /ʔ/, /ʰ/, /h/, and N.

In dealing with /ʔ/ and /ʰ/, the question presents itself, Is /ʰ/ a consonant or a suprasegmental, as the ad hoc name "laryngealization" implies? Because of alternation with final /ʔ/ in many cases, it is here treated as a consonant in function though it was treated apart from the consonant list.

It is not clear from my data whether all instances of /<sup>o</sup>/ can alternate with /ʔ/, with the result in turn that there is still some question about restrictions on Vʔ sequences within the syllable.

In like manner some of my data will have to be re-examined for voiceless offglides to determine which ones result in /h/ and which do not.<sup>38</sup>

All CV<sup>o</sup> and CVN can be illustrated, however, with no restriction on V before either:

	<u>CV<sup>o</sup></u>	<u>CVN</u>
i	/nai <sup>o</sup> / 'he's going'	/wi <sup>n</sup> / 'mouse'
e	/doke <sup>o</sup> / 'I got it'	/sen/ 'man'
ae	/naʔae <sup>o</sup> / 'he's coming'	/haen/ 'tongue'
u	/dok <sup>o</sup> u <sup>o</sup> / 'I set it down'	/sun/ 'eicada'
o	/napo <sup>o</sup> / 'it's happening'	/son/ 'firewood'
a	/dopa <sup>o</sup> / 'I'm making it'	/man/ 'hand'

### III. MORPHOLOGY

3.1. Introduction. New symbols in this section are:

- |   |   |
|---|---|
| (1) $\sqrt{\text{xxx}}$ = morpheme          | (5) $\sqrt{\text{x-}}$ = prefix         |
| (2) $\text{a}\sqrt{\text{xxx}}$ = allomorph | (6) $\sqrt{-\text{x}}$ = suffix         |
| (3) $\sqrt{/\text{xxx}}$ = bound root       | (7) $\sqrt{\text{!x}}$ = postbase       |
| (4) $\sqrt{\text{/xxx}}$ = verb base        | (8) $\sqrt{\text{x./}}$ = morphophoneme |
| (9) $\text{W}\sqrt{\text{xxx}}$ = word      |   |

Any of numbers 1-7 may be written morphophonemically: when this is done, a slant line is added to the right. (e.g.  $\sqrt{\text{xxx}/}$  = morpheme written morphophonemically). All of the above symbols will be used when their presence is necessary for the discussion at hand.

Technical descriptive terms will be italicized when they are first introduced. All Tewa examples will be given with spaces between morphemic words.

The theoretical framework that is the model for this study was alluded to briefly in the Introduction (sec. 0.1). To make clearer the reason for both method and limits of presentation in this section, the following detail is added. All illustrations will be drawn from English.

Morphology deals with morphs, the smallest grammatically significant units of the language. It groups these into morphemes by applying criteria embodying similarity of form or function coupled with grammatical non-contrastiveness of

distribution. The morphs which are members (allomorphs) of a morpheme, though phonologically different, are structurally the same at the morphemic level. Thus  $\mathfrak{a}/-s$ ,  $\mathfrak{a}/-z$ ,  $\mathfrak{a}/-iz$ ,  $\mathfrak{a}/-in$ , and others, are allomorphs of the English plural morpheme  $\sqrt{-Z}$  plural. The first three may be subgrouped and given a special cover symbol, e.g.  $\mathfrak{a}/-S/$ , to show that, given the occurrence of a sibilant plural as against "irregular" plurals, the choice of which member of  $\mathfrak{a}/-S/$  occurs is predictable on the basis of the phonology of the morpheme to which it is attached.

Further, morphology classifies morphemes by function, position, membership in closed or open classes, etc., using such descriptive labels as "root," "stem," "affix," "superfix," and others necessary for the given language. Thus the pluralizer just mentioned is a suffix;  $\sqrt{^i}ir$  as in talker, jumper, on the other hand, is a postbase, functionally different from the foregoing.

Segmental morphs, or bundles of them, when combined with necessary suprasegmental morphs, yield words, which are in turn classified by their morphemic composition.  $\sqrt{kaet}$  combined with  $\sqrt{'}$  (primary stress) yields the word  $\mathfrak{K}/kaet$ , which is classed as a morphemic noun because of its combinability with  $\sqrt{-Z}$  ( $\mathfrak{a}/-s$ ) plural.

All of the foregoing is subsumed in morphology under its central subheading, morphemics.

But as the building blocks of morphs qua morphs are phonemes, the building blocks of morphemes are morphophonemes-- a higher level of abstraction than phonemes, since morphopho-



nemes involve a wedding of both phonological and morphological structure. So knife is phonemically /nɛɪf/, and its plural is /nɛɪvz/; but the morpheme -n.ay.F./ is composed of the morphophonemes -n./, -ay./, and -F./, the first of which is a phoneme on the phonemic level and a morphophoneme on the morphemic level; the second is two phonemes but one morphophoneme; and the third is a special morphophoneme which has one of two phonemic representations, /f/ or /v/, depending on the following morphological environment.

The previous paragraph has described the "left-hand" division of morphology, morphophonemics. The following will describe the "right-hand" division, namely syntax.

Syntax deals with groupings of words. Both the method by which words are joined and the limits of the numbers of words so joined are determined by phonological criteria. An illustration of method of joining would be greenhouse (a house for plants) vs. green house (a house colored green): the different stress patterns manifest different grammatical structures. An illustration of limit is the fact that phonological phrases in an English utterance can be counted by the number of primary stresses that occur, there being an exact one-to-one relationship between number of such stresses and number of phrases; and the borders of these phrases can be determined by phonological transition phenomena of various types. Thus he's going to the store is two phrases consisting respectively of the first three words ('s being an allo-log of is) and the last three; and each of these three-word

phrases in turn is built from a two-word phrase with the third word added to it in a second combining step (phrasal combinations being binary in nature).

Analysis at the syntax level also brings into play from morphemics what we know of word classes, and by combining this knowledge with further phonological data, as well as noting certain characteristic juxtapositions of words, we reach the limits of syntax. In morphemics, big is an adjective (by virtue of its combination with -er and -est); but in the big#fall hard#, it is a syntactic nominal, since it occupies the same syntactic slot as do nouns after the.

3.2. Morpheme classes. We now turn to Tewa morphology, limiting discussion mainly to morphemics and to certain phases of morphophonemics. A detailed description of syntax would require separate treatment. It will, however, be alluded to at necessary points.

Tewa morphemes may be classified as either segmental or suprasegmental, the only suprasegmental one being word superfix (sec. 3.2.2).<sup>39</sup>

3.2.1. Segmental morphemes. There are two types of segmental morphemes, roots and affixes.

3.2.1.1. Roots are those morphemes that are members of "open" substitution classes and that may, under proper syntactic conditions, carry heavy stress. Roots may be either free or bound.

3.2.1.1.1. A free root may be converted directly into a

word (sec. 3.4) by the addition of word superfix. Free roots are of two types: a very small number that are neither combinable with other roots nor are affixable,<sup>40</sup> and the overwhelming majority that are combinable and/or affixable. The former will be called isolated free roots, the latter non-isolated free roots.

Examples of isolated free roots are:

√ka 'isn't that so?'	√hə: 'yes'
√ʔake 'probably'	√yo: 'no'

Examples of non-isolated free roots include:

√tá: 'hay, grass' (e.g. √tá: plus √-gî' 'for'  
= tá:gî' 'for hay')

√wə́hə̀: 'where' (e.g. √wə́hə̀: plus √-ri  
source/agent marker =  
wə́hə̀:ri 'from where?')

√cə́wə̀<sup>41</sup> 'blue, dark green' (e.g. √cə́wə̀ plus  
√ʔi' 3rd person =  
cə́wə̀ʔi' 'blue thing')

Non-isolated free roots could be subclassified by their freedom of occurrence with various affixes. For example, tá: and cə́wə̀ may occur with √-ân emphasizer, but wə́hə̀: does not, though all may occur with √-ri source/agent marker.

Though such detailed subdivision is not attempted here, it will be seen that word classes (sec. 3.4) reflect some of these affixal possibilities. There is, however, a useful subdivision into limited and universal varieties.

Limited non-isolated free roots are those which combine only with an affix, not with other roots. wəhəhə: is in this category.

Universal non-isolated free roots may combine with either affixes or with roots,<sup>42</sup> as cəwə. tá:, used above with an affix, can also be combined with another root.

táxowa 'straw' (√xowa 'skin')

nata:k<sup>ʔ</sup>wó 'there's hay' (√na- 3rd person;

√k<sup>ʔ</sup>wó 'to be in a place')

3.2.112. In contradistinction to free roots, a bound root may not be converted directly into a word, but must first be joined to either an affix or to one or more roots.

√/cəwə 'hot'

nacəwə 'it's hot' (√na- 3rd person)

cəwəʔi 'hot thing' (√ʔi 3rd person)

√/kê: 'hard'

p<sup>ʔ</sup>ónkê: 'thick-skull!' (√p<sup>ʔ</sup>ón 'head')

kê:ʔi 'something hard'

nakê:mu: 'it's hard'

3.2.12 Affixes. Affixes are members of "closed" substitution classes and ordinarily carry weaker stress per syllable type than do heavier stressed syllables of roots. There are two types of affixes, prefixes and suffixes,<sup>43</sup> prefixes being preposed to a root or to another prefix, and suffixes being postposed to a root or to another suffix.

Some affixes are restricted to occurrence with a particular type of root and may be labelled with the same name given to the word formed from that root; thus: noun affix, verb affix (and so verb prefix, verb suffix), etc. Those that are more catholic in their combinatory possibilities are given no special name. Actually, the widespread use of certain suffixes makes morphemic classification of words (sec. 3.4) more difficult than if there were in general more clear-cut restrictions on affix occurrences.

The large majority of Towa affixes will be discussed in sec. 3.4 along with the word types in which they occur.

A distinction could be made between true affixes and clitics, the former being affixes that are grammatically constituents of the sequence containing the base to which they are attached,<sup>44</sup> the latter of a larger unit (e.g. phrase) or of a further removed base. This distinction, however, would have to be discussed under syntax and semantics. It is merely illustrated here by two examples of clitics.

The first is of a suffix that is attached to a noun but is a constituent of a larger unit than the noun itself. This illustration is parallel to the  $\sqrt{-Z}$  possessive of English.

hæ?i sembí 'that man's' (hæ?i 'that'; sen 'man';  
 $\sqrt{-v\acute{i}}$  possessive)

The second example is of a verb prefix which is separated from the verb base by intervening forms, a very common

construction in Tewa.

nat<sup>?</sup>oxommae: 'he went to gather pinon nuts' ( $\sqrt{na}$ -  
 'he' [verb prefix];  $\sqrt{t}^?o$  'pinon nut';  
 $\sqrt{xon}$  'gather' [combining form];  
 $\sqrt{mae}$ : 'went')

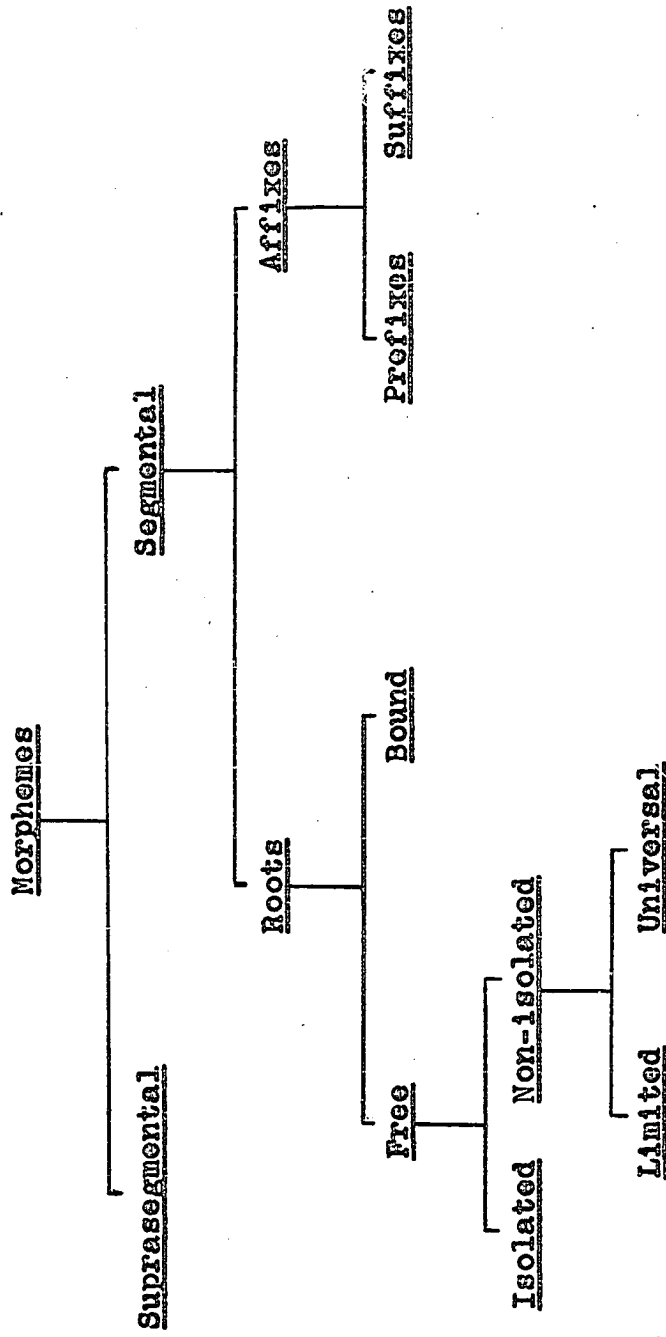
Note that in this case the verb prefix is actually attached to a noun.

3.2.2. Suprasegmental. At this stage of analysis, the only suprasegmental morpheme posited is word superfix. It may be that more will be needed if a satisfactory segmentation of verb prefixes (sec. 4.3.3) is attained, since some of these differ in tone only. A similar situation exists in verb bases (sec. 3.3.4).

Word superfix consists of a heavy stress and n-minus-one number of weaker stresses, where n is the total number of syllables in the word. Allomorphs of word superfix would consist in the arrangements of the stresses; e.g.  $\sqrt{m}$ -,  $\sqrt{-m}$ ,  $\sqrt{m}$ --, etc. (where each hyphen represents a syllable). If an intermediate degree of stress is discovered within words, more allomorphs will be necessary, of course.

3.3. Morphophonemics. This section will specifically describe that aspect of morphophonemics which pertains to changes in the phonemic shape of morphemes when they are juxtaposed. Where process terminology (A > B) is used, it is as a matter of descriptive convenience only, with no implication of any other necessary priority for a given form-- though in general the basic form of free roots will be that

Chart 3.--Summary of morpheme classes



which they assume in isolation, and that of bound roots and affixes that which is distributionally least restricted.

Four levels of alternant predictability are theoretically possible: (1) that which is dependent entirely on phonology, (2) that which is dependent on phonology within a class of morphemes, (3) that which is dependent entirely on classes of morphemes without regard to phonology, and (4) a combination of (2) and (3), in which a given morpheme has various alternants, the occurrence of some of which can be attributed only to classes of morphemes, but others of which may be predicted by phonology (as with English plurals).

In Tewa, (2) and (4) have been observed.<sup>45</sup>

Special symbols to be used in describing alternation are:

(1) For phonologically determined allomorphs: ~ will be read "alternating in a phonologically predictable manner with"; capital letter will represent segment alternation; superscript ampersand (&), segment addition; parentheses enclosing a phoneme, segment loss; and superscript t (<sup>t</sup>), tone assimilation. A few other special symbols will be described as they are used.

(2) For allomorphs governed by morpheme classes, infinity sign ( $\infty$ ) will be read "alternating in a morphemically determined manner with."

In the following discussion, affixes and roots will be described separately, since they behave somewhat differently from each other in respect to their morphophonemics-- though



there is some overlap. In all description and examples it will be taken as a given that no external juncture occurs between the morphemes in question.

3.3.1. Affixes. Affixes display the following processes: segment substitution, augmentation, contraction, and tone assimilation.

3.3.11. Substitution.

$\sqrt{D./}$  = /d/~r/, /d/ occurring utterance initial and following /n/, /r/ occurring elsewhere, in the following:

$\sqrt{D./}$ -initial pronominal verb prefixes.

dópa: 'I made it' ( $\sqrt{Dó-}$  'I-it')

na: rópa: 'I made it' (na: 'I')

damaen 'they (du.) are going' ( $\sqrt{Da-}$  'they 2')

wíramaempí 'they (du.) are not going'

$\sqrt{Da-}$  'surely'

?imúnde 'he's looking at it'

?iramúnde 'he surely is looking at it'

dommúnde 'I'm looking at something of mine'

dondamúnde 'I'm surely looking at something

of mine'

$\sqrt{-Də?}$  'only'

na:rə? 'only me'

na?ində? 'only us'

$\sqrt{-D(i^t)}$  source/agent marker

na:ri 'I as agent'

na?indi 'we as agent'

$\sqrt{B./} = /b/\sim/v/$  in environments similar to those for  
 $\sqrt{D./}$ .

$\sqrt{B./}$ -initial pronominal verb prefixes.

bînša: 'you (pl.) found him' ( $\sqrt{BîN-}$ /  
 'you pl. -him')

tivînša: 'did you find him?'

bi?æ: 'you ran' ( $\sqrt{Bi-}$ / 'you')

?y vi?æ: 'you ran' ( $\sqrt{?y}$ / 'you')

$\sqrt{-Bí/}$  possessive

naví 'my'

na?imbí 'our'

$\sqrt{N./} = /n/\sim/m/$ , the latter occurring before labials,  
 the former elsewhere. This change involves all affixes that  
 terminate in nasal consonant.

dômpa: 'I made it for him' ( $\sqrt{DÔN-}$ / 'I-it-for-him')

dôntege 'I lifted it for him'

hæ:ram bi?æ: 'when did you run?' ( $\sqrt{-aN/}$   
 question  
 marker)

hæ:ran ?i?æ: 'when did he run?'

3.3.12. Augmentation.<sup>46</sup> A few suffixes occur with a  
 longer form following /n/ than elsewhere.

$\sqrt{d^{\&}. /} = \emptyset^{47} \sim /d/$

$\sqrt{-d^{\&}á/}$  emphasizer = 'indeed'

na:á ?omaen 'I, indeed, am going'

na?indá gimaen 'we, indeed, are going'

?i k<sup>w</sup>i:á namaen 'the woman, indeed, is going'

?i sendá namaen 'the man, indeed, is going'

√-á/ series marker<sup>48</sup>

na:á naví ?e?núarí gamaen 'both I and my son are  
'going'

na?indá na?imbí ?e?núndarí gimaen 'both we and  
our sons are going'

(In these examples á/-á occurs on both na: 'I' and  
?e?nú 'son', and á/-dá on both na?in 'we' and ?e?nún 'sons'.)

√n̂./ = Ø ~ /n/

√-ân emphasizer = 'indeed'. This morpheme has an  
allomorph á/-mân which occurs only following √-Də?/ 'only'.  
Elsewhere á/-n̂ân/ occurs

na:rə? 'only me'

na:rə?mân 'only me, indeed'

na:ân ?omaen 'I, indeed, am going'

na?innân gimaen 'we, indeed, are going'

?i k̄i:ân namaen 'the woman, indeed, is going'

?i sennân namaen 'the man, indeed, is going'

√-an question marker. This morpheme has an allo-  
morph √-?an which occurs only following √-pí negative.  
Elsewhere √-n̂an/ occurs.

tiwínamaempí?an 'isn't he going?'

wé?ian namu: 'which one is it?'

wé?innan dimu: 'which ones are they?'

3.3.13. Contraction. Contraction occurs when cer-  
tain suffixes occur preceding √-á series marker, √-á em-  
phasizer, √-ân emphasizer, and √-an question marker.

√-g(e<sup>t</sup>)/ locative

p<sup>?</sup>o:ge 'Santa Fe' (lit. 'water place')

p<sup>?</sup>o:gá 'Santa Fe, indeed' (or, 'and Santa Fe')

√-piy(e)/ 'towards'

?opiye 'towards there'

?opiya<sup>h</sup>n 'toward there, indeed'

√-D(i<sup>t</sup>)/ source/agent marker

na:ri 'I (as agent)'

na:rá 'I (as agent), indeed' (or, 'and I  
as agent')

há:rí 'why' (lit. 'from what')

há:ran namaen 'why is he going?'

√-w(e)/ 'locative'

?owe 'over there'

?owá 'over there, indeed'

√-y(e<sup>t</sup>)/ locative (collective or mass)

?iye 'there'

?iya<sup>h</sup>n 'there, indeed'

### 3.3.14. Tone assimilation occurs with suffixes

√-g(e<sup>t</sup>)/ locative, √-D(i<sup>t</sup>)/ source/agent marker, and

√-y(e<sup>t</sup>)/ locative, which are considered to be inherently

toneless inasmuch as their tone is entirely predictable on

the basis of the tone of the preceding syllable: if the pre-

ceding syllable is high, they will be high; if glide or low,

they will be low. This has already been partially illustra-

ted above where these suffixes have been discussed. Further

examples are:

√-D(i<sup>t</sup>)/ source/agent marker

son 'firewood'	sondi 'firewood (as agent)'
són 'porcupine'	sóndí 'porcupine (as agent)'
pân 'bread'	pândi 'bread (as agent)'

√-g(e<sup>t</sup>)/ locative

√/naé 'proximate' naéngé 'around here'

√/?o 'remote' ?onge 'around there'

√-y(e<sup>t</sup>)/ locative (collective or mass)

naé:yé 'here'

?o:ye 'there'

No examples of √-g(e<sup>t</sup>)/ or √-y(e<sup>t</sup>)/ following glide tone occur in my data.

When vowel elision takes place (sec. 3.3.13), the vowel of the second suffix replaces the toneless vowel of √-g(e<sup>t</sup>)/, √-D(i<sup>t</sup>)/, or √-y(e<sup>t</sup>)/, as shown, e.g., in na:ri 'I (as agent)' plus √-á emphazizer > na:rá 'I (as agent), indeed'.

3.3.15. Combinations. It will be seen that by a combination of processes, some affixes have several allomorphs. This is illustrated for √-D(i<sup>t</sup>)/:

	Preceding a V	Preceding a C	
		Following a high tone	Following a low tone
Following /n/	ə/-d	ə/-dí	ə/-di
Elsewhere	ə/-r	ə/-rí	ə/-ri

Also, because of a combination of processes it is possible to find homophonous forms with different proveniences:

- (1) na?indá 'we (as agent), indeed' na?in 'we',  
 plus  $\sqrt{-D(i^t)}/$  ( $\hat{a}/-d$ ) source/agent  
 marker, plus  $\sqrt{-d\hat{a}^a}/$  ( $\hat{a}/-á$ ) emphazier.
- (2) na?indá 'we, indeed' na?in 'we', plus  $\sqrt{-d\hat{a}^a}/$   
 ( $\hat{a}/-dá$ ) emphazier.

The determination of which form exists in a given context would depend on the need for  $\sqrt{-D(i^t)}/$ . In na?indá gimaen 'we, indeed, are going', form (2) appears, since  $\sqrt{/maen}$  'going' would never occur with  $\sqrt{-D(i^t)}/$ . In na?indá ?ê:mû? ?in sennae? 'we, indeed, saw the men', form (1) appears, since  $\sqrt{-D(i^t)}/$  is required. But in na?indá ?ê:mû? 'we saw (someone or something)', the linguistic context alone would not be sufficient for analysis. The class of noun (sec. 4.2) which is the object of the verb would first have to be known from a larger context, either linguistic or metalinguistic.

3.3.16. Morphemic determination. Two affixes, involving limited morphemic conditioning,  $\sqrt{-\hat{a}n}$  emphazier and  $\sqrt{-an}$  question marker, were mentioned above (sec. 3.3.12). Few other affix alternants have been observed which show such morphemic conditioning; some of these are treated in the following subsections.

3.3.161.  $\sqrt{-n}$  set marker, is by far the most complex of all affixes, since, like the English plural, several irregular forms are involved. In forms 3-6, a separate tone mark indicates that the tone shown replaces the tone of the last syllable of the morpheme to which the allomorph in ques-

tion is attached.

1.  $\text{a}/\text{-n}$  occurs with allomorphs of  $\sqrt{?i}$  (sec. 3.3.221).

dimaennin 'the ones going' (< dimaen 'they are going';  $\text{a}/\text{ni}$  of  $\sqrt{?i}$ )

fá:gi?nin 'wide things' (< fá:gi?n 'wide' [plural stem];  $\text{a}/\text{i}$  of  $\sqrt{?i}$ )

2.  $\text{a}/\text{-?in}$

kó?ô:?in 'aunts' (< kó?ô: 'aunt')

k?ema?in 'friends' (< k?ema 'friend')

3.  $\text{a}/\text{-}^{\text{h}}\text{n}$

?e?nûn 'boys' (< ?e?nú 'boy')

?a?ñûn 'girls' (< ?a?ñú 'girl')

4.  $\sqrt{\text{-Nae}} [^{\circ} \sim ? \sim ?N] /$ .  $\tilde{N} = /ñ/$  following  $/i/$ ,  $/n/$  following  $/n/$ . The choice of terminus (in brackets) depends on what follows:  $/^{\circ}/$  before external transition,  $/?/$  before glottal stop or glottalized stop,  $\sqrt{?N}/$  elsewhere.

sennae 'men' (< sen 'man')

sennae?mbí 'men's' ( $\text{a}/\text{-bí}$  Possessive)

disennae?k?wó 'there are men' ( $\sqrt{?k?wó}$  'be in a place' [pl.] )

k<sup>w</sup>iñae 'women' (< k<sup>w</sup>i: 'woman')

5.  $\sqrt{\text{-}^{\text{h}}\text{nae}}$ :

?é:ñae: 'children' (< ?e: 'child')

## 6. ə/ - ^

k<sup>w</sup>iyô: 'old women' (< k<sup>w</sup>iyó 'old woman')

sedô: 'old men' (< sedó 'old man')

Allomorph number 1 is the only truly productive form. Number 2 occurs with several kinship terms besides the examples listed. 3-6 are exhaustively exemplified.

3.3.162. Optional<sup>49</sup> contraction occurs when the negative  $\sqrt{wí}$ - precedes most pronominal verb prefixes beginning with a glottal stop. The list of these is as follows (with prefixes numbered for reference in the discussion below):<sup>50</sup>

$\sqrt{wí}$ - 'negative' plus > non-contracted or contracted

1. $\sqrt{?o}$ -	wí?o	wó?
2. $\sqrt{?u}$ -	wí?u	wú?
3. $\sqrt{?ú}$ -	wí?ú	wú
4. $\sqrt{?ún}$ -	wí?ún	wún
5. $\sqrt{?aen}$ -	wí?aen	wâen
6. $\sqrt{?íví}$ -	wí?íví	wíví
7. $\sqrt{?úví}$ -	wí?úví	wúví
8. $\sqrt{?aén}$ -	wí?aén	waén
9. $\sqrt{?ê:-}$	wí?ê:-	wê:-
10. $\sqrt{?ó:-}$	wí?ó:-	wó:-
11. $\sqrt{?ovâen}$ -	wí?ovâen	wóvâen
12. $\sqrt{?ovê:-}$	wí?ovê:-	wóvê:-

A few of the contracted forms (wâen, wó:, wê:-) are homophonous with prefixes not combined with  $\sqrt{wí}$ -, but these are distinguished by the obligatory presence of the negative suffix  $\sqrt{-pí}$  when  $\sqrt{wí}$ - negative is present.

Tone patterns for these contractions are:



Tone of prefix-initial syllable	Resultant tone of contraction	Examples
high	high	3,6,7,8,10
glide	glide	4,9
low	high	1,2,11,12
	glide	5

In summary: (1) There are two allomorphs of the negative prefix  $\sqrt{wí}$ -,  $\mathfrak{a}/w$ - in contracted forms,  $\mathfrak{a}/wí$ - in non-contracted. (2) All pronominal prefixes which have contracted forms and carry low tone on their initial syllable have allomorphs with high tone, except number 5, which has glide. (3) In all cases of contraction the pronominal prefix-initial glottal stop is lost, but in 1 and 2 a glottal stop is introduced after the contraction.

3.3.2. Roots. Detail for individual roots will not be as exhaustive as it was for affixes for the following reasons: (1) By very definition roots are not limited in number as are affixes, and are therefore more difficult to find in all their manifestations. (2) Allomorphs of roots show much less purely phonological conditioning than do affixes, being more dependent on other morphemes or classes of morphemes as conditioning factors. Also, since apart from verb bases, most combinations involving root alternation are of root plus root, and are consequently beyond the level

of word, as complete a study has not been made for these as for the affix-root and affix-affix combinations already described. (3) Verb bases (sec. 3.3.4) present special complexities that warrant their being treated separately, and that make minute dissection of them of questionable relevance.

3.3.21. Phonologically governed alternation. In roots the main cases of phonological determination among allomorphs involve  $\sqrt{N}/$  and  $\sqrt{N^{\hat{c}}}/$ .

3.3.211.  $\sqrt{N}/$  is found syllable final either on roots that otherwise have no other alternants, or as one of a group of morphemically conditioned alternants.

Root with no other alternants:

pân 'store bread'

bayékí napânk<sup>ʔwó</sup> 'there's lots of store bread'

wí pâm bîñša: 'you (pl.) found some store bread'

Roots with several alternants (listed in chart 4):

p<sup>ʔ</sup>ôn 'head'

p<sup>ʔ</sup>ômbe: 'head (lit. 'head container')'

p<sup>ʔ</sup>ôn wéré 'pillow'

man 'hand'

mammú: 'glove'

manxú 'finger'

3.3.212.  $\sqrt{N^{\hat{c}}}/$  occurs, for some speakers, in alternants of a small group of nouns whose last syllable is CV? or NV'. The shorter form occurs before terminal transition, glottal stop, or glottalized stops. In the longer form, the

/°/ of NV° becomes /?/ before the  $\sqrt{N^{\hat{e}}}$ ./.

pə? 'thread'

?opa?nda' 'I want thread' ( $\sqrt{da}$  'want')

wí pa?m bîńša: 'you (pl.) found some thread'

?ipa?p?án 'he spun thread' ( $\sqrt{p?án}$  'spin')

cíní' 'cricket'

wí cíní?n dómû' 'I saw a cricket'

3.3.22. Morphemically governed alternation. The following subsections will illustrate, first, alternations in syllable borders, then alternations of suprasegmental features. All discussion of these will be specifically understood to except the special cases of appellations and verb bases, handled separately in secs. 3.3.3 and 3.3.4.

3.3.221. Syllable onsets. There is, in general, little variation in syllable onsets, though of the few morphemes that are thus involved, marked variations exist.

$\sqrt{?i}$  3rd person. This morpheme is more complex allomorphically than any other in the language.<sup>51</sup> It occurs very frequently with reduced stress as either a definite article or as the second member of compound nouns (having the effect in this position of a nominalizer). Allomorphs 1, 2, 4, 6, and 8 each have two phonologically determined forms: one terminates in /°/ before external transition, the other, occurring elsewhere, lacks /°/. This variation is illustrated for numbers 1 and 2.

1.  $\sqrt{?i}(\text{°})$ /, occurs as a free form, functioning as a pronoun or definite article, as well as the second member

of a compound.

dómû° ?i° 'I saw him°

?i namaen 'he's going°

?i sen namaen 'the man is going°

t°ô:°?i° 'worker° (< t°ô:° 'work°)

t°ô:°?iân namu: 'he is a worker, indeed°

2. a/di(°)/

namaendi° 'the one going° (< namaen 'he is going°)

?i to namaendi rómû° 'I saw the one who was going°

xæge?di° 'helper° (-//xæge? 'help°)

naví xæge?di rîmmaen 'my helper is going°

he?endi° 'big things° ( -//he?en 'big [non-sg.]°)

he?endi namu: 'the things are big°

3. a/ni occurs with the same morphemes which occur with a/di(°)/ above (those ending in a closed syllable) when -n set marker is also present.

dimaennin 'the ones going°

xæge?nin 'helpers°

he?ennin 'big ones°

4. a/bi(°)/

háembi° 'fighter° (< háen 'war°)

tuxe?bi° 'town crier° (< -//tuxe? meaning uncertain)

5. a/mi occurs with the same morphemes as a/bi(°)/ when -n is also present.

háemmin 'fighters°

tuxe?min 'town criers°

6.  $\text{a/yi}^{(0)}/$ 

he?yi° 'something long' (<  $\sqrt{\text{he?}}$  'long')

7.  $\text{a/ni}$  occurs with the same morphemes as  $\text{a/yi}^{(0)}/$  when  $\sqrt{-n}$  is also present.

he?ñin 'something long'

8.  $\text{a/wi}^{(0)}/$ 

xa'wi° 'singer' (< xa° 'sing')

(The form of  $\text{a/wi}^{(0)}/$  with  $\sqrt{-n}$  is simply  $\text{a/wi}$ , as in xa'win 'singers')

9.  $\text{a/i}$  occurs only with the non-singular stems of words containing  $\sqrt{-gi^t}$  / 'shaped', when these also occur with  $\sqrt{-n}$  set marker.

fá:gi?nin 'wide things' (< stem fá:gi?n)

be:gi?nin 'round things' (< stem be:gi?n)

10.  $\text{a}/\{(\text{^})\}\sim\text{?}/$ . This summary symbolization results from the coalescing of ?i° with the vowel of  $\sqrt{-v\acute{i}}$  possessive and  $\sqrt{-gi^t}$  / 'shaped'. The form in braces occurs with  $\sqrt{-v\acute{i}}$  everywhere except before  $\sqrt{-n}$  set marker, and with  $\sqrt{-gi^t}$  before external transition; the glottal stop form occurs elsewhere. (ˆ) = /' / when affixed to  $\sqrt{-v\acute{i}}$  or  $\text{a}/-g\acute{i}$ , /` / when affixed to  $\text{a}/-g\grave{i}$ . Resultant forms are summarized with naví 'ny', fá:gi 'wide' and be:gi 'round' as examples.

	Combined with ?i'		
	before external transition	before √-n	elsewhere
naví	naví'	naví?	naví'
fá:gi	fá:gi'	fá:gi?	fá:gi?
be:gi	be:gi'	be:gi?	be:gi?

Allomorphs 1, 2, and 3 are by far the most common for √?i'.

√/?o' 'doing'

ə/√/?o' ∞ ə/√/do' ∞ ə/√/bo' ∞ ə/√/yo' ∞ ə/√/wo'

These forms are parallel to forms 1, 2, 4, 6, and 8, respectively, of √?i'. A root that occurs with a given allomorph of √/?o' will also occur with the parallel form of √?i', e.g.:

dóxa'wo' 'I'm singing'      xa'wi' 'singer'

dókámbo' 'I'm fighting'      hámbi' 'fighter'

The only observed exception to this is with √c'é: 'yellow'.

dóc'é:?'o' 'I'm making it yellow (not \*dóc'é:yo')

c'é:yi' 'something yellow' (not \*c'é:?'i')

Parallelism of form involves parallelism of frequency; thus √/?o' and √/do' are the most frequently found allomorphs of √/?o'. √/?o' is productive in forming compounds with Spanish or English words (cf. dóyús?'o' 'I'm using it', sec. 2.3.2). In strictly Tewa constructions the two forms, where they occur, are in complementary distribution. ə/√/?o' occurs after roots ending in open syllables or /'/, and after

prefixes;  $\hat{a}/\hat{d}o'$  occurs elsewhere.

Two verb bases also exhibit initial variation,  $\sqrt{/?an} \infty \sqrt{/?nan}$ , and  $\sqrt{/?áen} \infty \sqrt{/?náen}$ . The forms with initial /n/ occur after roots ending in /n/; those with initial /?/ occur elsewhere.

$\hat{d}in?áen$  'something of mine is seated' ( $\sqrt{\hat{d}in-}$  = verb prefix)

$\hat{d}impannáen$  'something of mine is in jail' ( $\sqrt{pan}$  'prisoner' = root)

$\hat{d}on?an$  'I did it for him' ( $\sqrt{\hat{d}on-}$  = verb prefix)

$\hat{d}ontunnan$  'I read it for him' ( $\sqrt{//tun}$  'read' [SC] = root)

3.3.222. Syllable termini. Examples for syllable termini are shown in chart 4. They include the full sets of alternations for the forms in sec. 3.3.211, plus several others chosen to involve all syllable types. The examples are not exhaustive, but represent the more common combinations of allomorphs.

3.3.223. Tone alternation. Tonally different allomorphs are quite limited among the types of morphemes now under consideration. Besides 'head' in chart 4, these occur in my data:

$\sqrt{be}$ : 'round';  $\hat{a}/be$ :  $\infty$   $\hat{a}/b\hat{e}$ :

$be$ : 'apple, fruit'

$cít\acute{e}mb\hat{e}$ : 'eyeglasses' ( $\sqrt{c\acute{i}}$ : 'eye';  $\sqrt{//ten}$  'cylindrical')

$púnambe$ : 'ball' ( $púnan$ , meaning uncertain)

$\sqrt{ten}$  'cylindrical';  $\hat{a}/teN$ :  $\infty$   $\sqrt{t\acute{e}N}$ :

$cít\acute{e}mb\hat{e}$ : (as above)

Chart 4.--Selected root alternants

Root meaning	CV:	CV	CVN	CVh	CV?	CV°	CV?N
'head°			ə/pʰoN/ pʰon 'head°	ə/pʰoh pʰohxowa 'scalp°	ə/pʰo? pʰoʔpʰo: 'baptism°		
'hand° 53		ə/ma domasun 'I massaged him°	ə/man/ man 'hand°	ə/mah domahpu: 'I punched him°	-/ma? domaʔpʰi:re 'I wrung it°		
'water, liquid°	ə/pʰo: pʰo: 'water°	ə/pʰo wa:pʰo 'milk°	ə/pʰoN/ pʰombe: 'water jug°		ə/pʰo? pʰoʔpʰoŋge 'across the water°		
'deer°	ə/pʰe: pʰe: 'deer°			ə/pʰeh pʰehsen 'antler°			
'wide°	ə/fá: fá:gi: 'something wide°					ə/fá: fáfá: 'board°	ə/fá?N/ tʰáfá?ndi: 'peaked roof° (SJ)



'quality of'	ə//wó hf:wó 'good'				ə//wó? hf:wó?ndí 'good thing' (SC)	ə//wó? hf:wó?ndí 'good thing' (SJ)
'satiety'	ə//šú ʔóšúʔan 'eat enough'				ə//šú? našúʔmu: 'he is satiated'	
'stick'	ə//fé fé 'stíok'	ə//féN/ fémbe: 'box' (SJ)	ə//féh naféhtóʔon 'it's locked'			
'doing'	ə//ʔó dóʔomæn 'I was doing it'				ə//ʔó? dóʔó 'I'm doing it'	
'bow'	ə//ʔá ʔá 'bow'		ə//ʔáh dóʔáhpa: 'I made bows'	ə//ʔáh? naʔáhʔwó 'there are bows'		

temfé 'trumpet' (fé 'stick')

√/?ân 'foot'; √/?ân/∞ √/?an<sup>52</sup>∞ √/?qh ∞ √/?q?

?ân 'foot'

?anto 'shoe' (√/to 'dress, container')

?i?ghtuye 'he stepped forward' (√/?tuye 'move out, up')

?i?q?c?ári 'he kicked it' (√/?c?ári, meaning uncertain)

√/mâe?mâe: 'uncle'; √/mâe?mâe: ∞ √/mâe:mae

mâe?mâe: 'uncle'

mâe:mae?e: 'nephew'

3.3.224. Nasalization. Allomorphs which display V ∞ Ȳ, though comparatively more common than those differentiated by tone, are still rather infrequent. Dialectally determined use of Ȳ vs. V was noted in 2.1.29. The examples cited with Ȳ for SJ have allomorphs elsewhere with V for all pueblos, however, thus yielding a contrast in SJ (e.g. √/?yô: 'sleep'; √/?yô? as in 2.1.29 ∞ √/?yô: as in nayô:da' 'he's sleepy'). A similar situation is seen in the examples for allomorphs of 'head' in chart 4 when these are taken from SJ (i.e. p?ôh and p?ô?). 'satiety' (chart 4) and 'foot' (sec. 3.3.223) provide examples that seem to be common to all pueblos.

3.3.225. Conclusions. All of the forms which have been described for allomorphs have been monosyllabic, except √/mâe?mâe: 'uncle', these being the easiest to illustrate for a variety of allomorphs. There is possibly a high correlation between stress and root alternants, since in practically all cases the last syllable is involved, but heavy stress

falls generally on root-initial syllable. In monosyllabic roots the stressed syllable and the changing syllable are, of necessity, the same.

Further, if we refer to the levels of alternant predictability in sec. 3.3, it should be noted that there are many cases of level 4 which show definite tendencies to certain phonological combinations. Thus, e.g., monosyllabic roots of syllable pattern CV in isolation will usually be CV? before a glottalized stop (see 'bow' in chart 4); and conversely, if a morpheme has an allomorph ending in V?, this form will most often appear before a glottalized stop. Since, however, allomorphs in V? also appear in other contexts (cf. 'he is satiated' in chart 4), a completely generalized statement cannot be made.

Footnote 45 is also pertinent here, and can be illustrated from sec. 3.3.221 by the allomorphs of  $\sqrt{?}an$  and  $\sqrt{?}aen$ , and by the two forms  $\sqrt{?}o^{\circ}$  and  $\sqrt{?}do^{\circ}$  of  $\sqrt{?}o^{\circ}$ .

It may be, as syntax is further studied and as roots are seen in a greater variety of combinations, that individual root allomorphs will be seen to have phonologically non-contrastive distribution.<sup>54</sup>

In concluding this section, it is suggested that some allomorphs may be relevant to a description of contrastive syntactic units. Compare the following for  $p^{\circ}o$ : 'water, liquid':

pʔoʔ pʔáengé 'across the water'

pʔo: kʔwáye 'above the water'

cfʔpʔo: 'tear' ( $\sqrt{\text{éí}}$ : 'eye')

wâ:pʔo 'milk' ( $\sqrt{\text{wâ}}$ : 'breast')

3.3.3. Appellations. A special case of alternation occurs in certain situations of name-calling (such as 'liar!', 'crab!', etc.). Some of these appellations are composed of morphemes any or all of which may undergo change regardless of their morphemic or syntactic provenience; others show no change because the basic forms already are of such phonemic shape as to fit an appellation pattern (a common pattern, e.g., being a final syllable  $\text{CV}^{\hat{v}}$ :). Some are morphemes in combination with  $\text{só?yó}$  'big', used in a derogatory sense as in English 'big mouth'.

Though most of the morphemes involving change are recognizable as alternants of known forms, some employ recognizable forms in combination with syllables which do not seem to exist as lexically or grammatically significant forms elsewhere.

tʔe?yâ: 'crab!' <  $\sqrt{\text{tʔe}}$ : 'angry' plus  $\sqrt{\text{ya}}$ : meaning uncertain, as in  $\text{natʔe:ya}$ :  
'he's crabby'.

hó?yô: 'liar' <  $\sqrt{\text{hóyo}}$  'lie', as in  $\text{?ihóyomá}$ :  
'he's lying'

wó:yí: 'tagalong!' <  $\sqrt{\text{wó}}$ : 'follow', as in  $\text{nawómsen}$   
'he's following'; plus  $\sqrt{\text{yi}}$   
'to move about', as in  $\text{nayi}$   
'he's moving about'.

yóho: 'sleepyhead!' < √/yô: 'sleep', as in nayô:da'  
 'he's sleepy'; plus √/ho:  
 (meaning uncertain)

šy?mú só?yó 'never-get-filled-up!' < √/šy? 'satiety'  
 plus √/mu: 'to be'; as in  
 našy?mu: 'he is satiated'.

An example of an appellation which simply combines components is ša:bâ: 'lazy-to-get-up!' < √/ša: 'arise', as in ?iša: 'he arose'; and √/bâ: 'be lazy', as in nabâ: 'he's lazy'.

### 3.3.4. Verb Bases.

3.3.41. Problems of analysis. Verb bases (to be defined below) go together in semological sets which we will call verb sets, the individual members of which are principal parts. The morphemic relationship between these principal parts is extremely complex. The difficulties involved in making a generalized analysis of principal parts include the following: (1) Many different morphophonemic statements are required to describe most sets. (2) A large number of types of sets are involved. By "types of sets" is meant that, given principal parts a, b, and c for verb set A which show the morphophonemic relationships a:b=x, b:c=y, and c:a=z, this is one type; but if for verb set B, a:b=x, b:c=y, and c:a=q, this is another type.<sup>55</sup> (3) If one were to start from one principal part as a basis for the simplest description of one set, for a second set a different principal part might have to be chosen.

3.3.42. Description. Chart 5 is a list of verb sets which have been chosen for illustrative purposes. The combinations shown in these sets are by no means all that exist; many more sets could be added which would not exactly--though some might partially--duplicate the combinations given.

Each horizontal row involves a different verb set; each vertical column involves a principal part.<sup>56</sup> The numbers at the left of each row are for reference purposes below. The headings for each column, roughly descriptive of the function of the English translation value of each principal part will be discussed further in sec. 3.4.22.

3.3.43. Conclusions. The largest number of verb sets showing similar patterning include those displaying -nde<sup>o</sup> or -re<sup>o</sup> in the habitual/progressive, though even among these, subsets have to be established on the basis of tone (e.g. 1, 7, 17). In my data some fifteen verb sets exist that pattern like 7 in regard to tone, by far the largest number for any one type; but these must subdivide on the basis of other criteria, such as initial-consonant alternation or difference in type of stative form (described below).

As previously stated, comparison of principal parts shows that various processes or types of morphophonemic alternation would be necessary for the description of the majority of sets. Most of the morphophonemic phenomena applicable to other forms, described above, are also applicable to verbs. To be added to the list for verbs is whole-syllable differential in forms (12, 32, 37), and frequent alterna-

Chart 5.--Verb sets<sup>57</sup>

No.	Meaning	Habitual	Progressive	Completive
1.	divide	wiyende°	wiyende°	wiye
2.	cut hair	k'owande°	k'owande°	k'owa
3.	paint	?aeñunde°	?aeñunde°	?aeñu
4.	rescue	?e:wonde°	?e:wonde°	?e:won
5.	hang up	x <sup>wi</sup> ?wonunde°	x <sup>wi</sup> ?wonunde°	x <sup>wi</sup> ?wonu
6.	pinch	ma?c'ʒe:re°	ma?c'ʒe:re°	ma?c'ʒe:
7.	scatter	wárende°	wárende°	wáre
8.	break	hávende°	hávende°	háve
9.	fill	p'írende°	p'írende°	p'íre
10.	set down (sit down)	sógende°	sógende° (sogehon)	sóge
11.	bring in	c'úrende°	c'úrende°	c'úre
12.	enter	c'uyʒ?	(curemsen)	c'ý
13.	kick	?ʒ?c'árinde°	?ʒ?c'árinde°	?ʒ?c'ári
14.	pay	wáʒande°	wáʒande°	wáʒa:
15.	name	xáñáe?nde°	xáñáe?nde°	xáñáe?
16.	stand up	wínunde°	wínunde°	wínú
17.	spend	hánunde°	hánunde°	hánú
18.	be used up	hánde°	hánde°	hán
19.	see	múnde°	múnde°	mú°
20.	grasp, fight	ñánde°	ñánde°	ñá°
21.	cut	c'ánde°	c'ánde°	c'á°

Chart 5.--Continued

No.	Potential	Imperative	Combining	Stative
1.	wiyé	wiyé	wiye	wi?yen
2.	k?owá	k?owá	kowa	ko?wan
3.	?aeñú	?áeñú	kaeñu	kae?ñun
4.	?e:wo:n	?e:won	?e:won	?e:wo?on
5.	x <sup>w</sup> i?wonú	x <sup>w</sup> i?wónú	x <sup>w</sup> ihk <sup>w</sup> onu	x <sup>w</sup> i?won
6.	ma?c?áe:	ma?c?áe:	ma?c?áe:	ma?c?áe?aen
7.	wáre	ware	ware	wa?ren
8.	háve	have	xave	xa?ven
9.	p?íre	p?íre	pire	pi?ren
10.	sóge	soge	soge	?áen
11.	c?úre	c?ure	cure	cu?ren
12.	c?ún	cuwave	cure	--
13.	?á?c?ári	?á?c?ári	?áhcari	?áhca?rin
14.	wá?â:	wá?â:	wá?â:	(wá?â:mu:)
15.	xáñáe?n	xáñáe?	xáñáe?	xá?ñáen
16.	wínú	wínú	k <sup>w</sup> inu	k <sup>w</sup> i?nun
17.	hánú	hánú	xanu	xa?nun
18.	há:ni	--	xan	--
19.	mún	mú'rí	puwáe	pu?waen
20.	ñá:	ñá'	cá:	cá?an
21.	c?á:	c?á'	ca:	ca?an



## Chart 5.--Continued

No.	Meaning	Habitual	Progressive	Completive
22.	get (sg./ du. obj.)	kénde°	kénde°	kê°
23.	break (as a stick)	éánde°	éánde°	éá:
24.	taste	dáende°	dáende°	dâe:
25.	get (pl. obj.)	hónde°	hónde°	hógi
26.	stir	wí:re°	wí:re°	wí:
27.	throw away (pl. or col- lect. obj.)	č'á:re°	č'á:re°	č'á:
28.	bathe	?o:re°	?o:re°	?o:
29.	return	bunde°	bummá:	bun
30.	send	sande°	sande°	san
31.	give (hand over)	?ande°	?ande°	?an
32.	bite	xunde°	xunde°	xu:gi:
33.	take	húyq°	hon	ho°
34.	lay down	k'úyq°	k'úyq°	k'ú°
35.	arrive	póyq°	póyq°	pówá
36.	kill	héñi°	héñi°	he:
37.	bring	máñae°	má°	ma:
38.	give	mae°	mae°	máegi
39.	spank	x <sup>w</sup> qe°	x <sup>w</sup> qe°	x <sup>w</sup> qeri
40.	eat (something)	k'o°	k'o°	k'o:

## Chart 5.--Continued

No.	Potential	Imperative	Combining	Stative
22.	ké:y	ke°	ke	ke?en
23.	əâ:n	əa°	əa(°)	əa?an
24.	dâe:	dâe:	dâe:	dâe?aen
25.	hón	hó'gí	xon	xo'gin
26.	wí:	wí:	wí:	wí?in
27.	ě'â:n	ě'a°	ěa(°)	ěa?an
28.	?o:	?o:	ko°	ko?on
29.	bu:n	bun	bun	bu?un
30.	san	san	san	sa?an
31.	?a:n	?an	kan	--
32.	xu:n	xú'gí	xu:gi:	xu'gin
33.	hú:w	hû:	xu?wa	xu?wan
34.	k'ú:w	k'u°	ku	k'ó:
35.	pówá:	po?wawe	powa	--
36.	hé:y	he°	xe	xe?en
37.	má?	má°	pəfə:	pə?an
38.	mâe:n	mâe:	pəe	pəe?aen
39.	x <sup>h</sup> ǵen	x <sup>h</sup> ǵe:	x <sup>h</sup> ǵeri	x <sup>h</sup> ǵe?aen
40.	k'ó:	k'ô:	ko:	(ko:mu:)

## Chart 5.--Continued

No.	Meaning	Habitual	Progressive	Completive
41.	make	pa <sup>o</sup>	pa <sup>o</sup>	pa:
42.	grind	tʔa <sup>o</sup>	tʔa <sup>i</sup>	tʔá:
43.	do	?o <sup>o</sup>	?o <sup>o</sup>	?an
44.	put in	tó:ʔó	tó:ʔó	tógi
45.	throw away (sg. or du. object)	pʔé:ʔé	pʔé:ʔé	pʔégi
46.	set down	kí:ʔí	kí:ʔí	kíri
46a.	set down	--	--	--
47.	be cold	--	--	--
48.	be sick	--	--	--
49.	become	po <sup>o</sup>	po <sup>o</sup>	pó:
50.	come	?ae?n	?ae <sup>o</sup>	?ae:
51.	go	mae?n	maen	mae:
52.	go out	pi <sup>o</sup>	(pi:maen)	pi:
53.	be standing	--	--	--
54.	forget	--	--	--

## Chart 5.--Continued

No.	Potential	Imperative	Combining	Stative
41.	pa:	pâ:	pa	paʔan
42.	tʔâ:n	tʔâ:	ta(°)	taʔan
43.	ʔam	ʔan	kan	--
44.	tô:n	toʔ	to	toʔon
45.	pʔê:n	pʔe'	pé(°)	peʔen
46.	kî:n	kiʔ	ki	čá
46a.	čáʔn	--	čan	--
47.	--	--	--	kʔósé
48.	--	--	--	he:
49.	púʔw	puʔwave	puʔwa	--
50.	ʔǎe:	kǎe'(ve)	kǎeʔae:	--
51.	mú	pún	pun	---
52.	pi:	pi:ve	pi:	--
53.	--	--	--	win
54.	--	--	--	ʔóre

tion in initial consonants. Such alternations peculiar to verbs are: glottalized stop or affricate  $\infty$  the non-glottalized counterpart (2, 9, 27); nasal consonant  $\infty$  homorganic stop or affricate (20); /ʔ/  $\infty$  /k/ (28, 31); /h/  $\infty$  /x/ (8, 33); and /w/  $\infty$  /k<sup>w</sup>/ (16).

Some sets lack one or more of the principal parts (10, 12, many others). In some cases the semological equivalent of the progressive is the combining form compounded with the progressive form of 'go' (51), 'take' (33), or, in a very few instances, 'come' (50). The forms in parentheses in 10 and 12 are such.<sup>58</sup> Some verb sets do not include a stative form built on the glottal interruption pattern of other sets; rather, a suppletive form occurs (10, 34, 46), or the combining form is used with  $\sqrt{\mu}$ : 'be' (14, 40), or the stative form is the only one that exists (47, 48, 53, 54).

The glottal interruption pattern for statives can usually be predicted from the combining form, but in some cases (25, 37, 39) cannot.

Stative forms themselves, however, in many instances form sets on the basis of affixation for potential or future. One such case is illustrated in 46 and 46a, the latter demonstrating how a stative, in its turn, may have allo-forms.<sup>59</sup>

A few allo-forms of combining forms also occur: 23, 27, 42, and 45 are shown with /<sup>o</sup>/ in parentheses, this occurring before  $\sqrt{-ri}$ : result and  $\sqrt{-ri}^o$  habitual result.

With the foregoing discussion as background, we now define verb base: A verb base is any form corresponding to

the principal parts of a verb (or their allo-forms) as illustrated in chart 5. The terms "base" and "principal part" are used simply as a means of considering the forms from different viewpoints, principal part from the standpoint of semantics, base from the standpoint of morphemics.

Depending on (1) method of segmentation, and (2) the particular verb set involved, a base may also be identical with what has been defined as a root (specifically, a bound root [sec. 3.2.112]). In short, the term is introduced as a convenient means of obviating the necessity of segmentation of these verb forms, while recognizing the fact that usually a comparison of two or more forms within any given set (or sometimes a comparison of forms from two sets within any one principal part) could lead to some sort of morphemic segmentation for the specific forms involved. It also obviates the necessity of deciding whether zero allomorphs are to be established when sets such as 4 and 14 are compared with 2 and 5 in the Completive, Potential, Imperative, and Combining columns. This question is particularly acute for the Habitual and the Progressive, since, while some verbs differentiate these or lack the Progressive, for the majority of verbs they are undifferentiated.

Other analyses do not deal with the above in any detail. H states that "verb forms are very irregular as regards addition of adverbial elements . . . These elements include those which give expression to tense, on the basis of which we could establish 30 or more 'conjugations'" ("A Brief Des-

cription," 502). In Dozier's analysis, "tense-modal enclitics are nearly always fused to the final verb stem; that is, they are morphemic and not phonetically distinct" ("Verb Structure," 120).<sup>60</sup> Although he does not elaborate on the statement, it is to be presumed that he means by it what we have explicated above.

3.4. Words. A word in Tewa consists of a single root (or verb base) with or without affixes, plus word superfix. The process of word formation may be shown as follows:

- (1)  $\sqrt{na}$ : ( $a/\sqrt{na}$ ) 1st person &  $\sqrt{w}$  ( $a/\sqrt{w}$ ) word superfix  $\rightarrow$   $w/\sqrt{na}$ : 1st person.
- (2)  $\sqrt{na}$ : ( $a/\sqrt{na}$ ) 1st person &  $\sqrt{-n}$  ( $a/\sqrt{-n}$ ) set marker &  $\sqrt{w}$  ( $a/\sqrt{w}$ )  $\rightarrow$   $w/\sqrt{na-n}$  1st person non-singular.
- (3)  $\sqrt{dó-}$  ( $a/\sqrt{dó-}$ ) 'I-him' &  $\sqrt{mú}$  'saw' &  $\sqrt{w}$  ( $a/\sqrt{w}$ )  $\rightarrow$   $w/\sqrt{dó-mú}$  'I saw him'

In subsequent description the word symbol will be used only where it is necessary to distinguish words from morphemes. In all cases word superfix will be assumed as a sine qua non.

In the above examples, a simple linear process of morpheme addition is assumed. However, recalling that the difference at word level<sup>61</sup> between free and bound roots (secs. 3.2.111 and 3.2.112) is that the former may occur with affixes, but the latter must do so, we find in the latter an obligatory relationship; and where a bound root occurs with more than one affix, the question must arise,

Which of the affixes is (or are) obligatory to the root? Further, in the case of multiple affixes occurring with either type of root, is there either unilateral or mutual dependence between any of the affixes?<sup>62</sup> The following notation is suggested to answer these questions.<sup>63</sup>

1. Underlining: single underline indicates a free root; double underline a bound root or verb base.

2.  $\underline{x}$   $\underline{y} = y$  is the first-layer affix necessary to  $\underline{x}$   
In a very few cases this must be modified to:

$\underline{z}$   $\underline{x}$   $\underline{y} = z$  and  $y$  mutually necessary to  $\underline{x}$ .

3. For optional affixes, superposed arrows show direction of dependence of occurrence:

a.  $\overrightarrow{x} \overleftarrow{y} = x$  is unilaterally dependent on  $y$   
(i.e. if  $x$  is to be present,  $y$  must also be present).

b.  $\overleftrightarrow{x} \overleftrightarrow{y} = x$  and  $y$  are mutually dependent  
(neither may occur without the other).

c.  $\overleftarrow{x} \overrightarrow{y} =$  either  $x$  or  $y$  may occur, but if both occur, there is a further contingency (i.e., something else must occur).

d.  $\underline{x} \quad y \quad z = \underline{x}$  may occur with either  $y$  or  $z$  or both--no arrows, because no dependencies involved.

Two actual occurrences, one simple, the other complex will illustrate the above.

(1)  $\sqrt{k^w i}$ : ( $\underline{\underline{a}}\sqrt{k^w i}$ :) 'woman' &  $\sqrt{-ri}$  ( $\underline{\underline{a}}\sqrt{-ri}$ ) source/agent &  $\sqrt{-bo}$  emphasizer &  $\sqrt{^m}$  ( $\underline{\underline{a}}\sqrt{^m--}$ ) word superfix  $\longrightarrow$   $\sqrt{^m k^w i:ribo}$  'woman as agent (emphatic)'

$\underline{\underline{k^w i}}$ :  $ri \quad bo$





Because of the large number of affixes that exist, some of them quite widespread in their distribution, and because of some residual problems of morpheme identification, the following classification does not purport to be exhaustive, but will cover the most numerous and most easily identified types of morphemic words. Those that will be discussed are particles, verbs, nouns and class Z words.

3.4.1. Particles are those words that derive from isolated free roots. That is, they cannot be affixed except under the special semological circumstances mentioned for these roots (fn. 41). (A parallel in English would be the affixation of a preposition in such an utterance as "there are too many 'ons' in that sentence"--obviously a special case.)

√/ka 'isn't that so?'

√/hə: 'yes'

√/yo: 'no'

√/ake 'I bet'

### 3.4.2. Verbs

3.4.21. Definition. A verb is a word that may occur with the prefixes √wé:- 'again' and √pi- 'self'. Verbs always contain a verb base and a pronominal prefix. When the potential and combining bases are used, a suffix is also obligatory.

In the following discussion verb sets from chart 5 will be referred to by their number preceded by "v.s."

3.4.22. Meanings of principal parts. Although a full discussion of the implications of the headings in chart 5 is

not within the purview of this study, the following examples will illustrate some of the main areas of correspondence between the uses of Tewa verb principal parts and English forms. Sets 8, 19, 50, 51, and 52 will be used for exemplification.

3.4.221. Habitual: Shows action<sup>64</sup> done habitually.

hãe:ri waembo t'ãehkí napi' 'he always goes out'

na?ae?nda namae?nda 'he keeps coming and going'

3.4.222. Progressive: Shows action in progress. Usually equivalent to an English present, but can also be collocated with expressions such as "yesterday," "a year ago," etc.

dómunde' 'I'm looking at it'

wí yãre fare rómunde' 'I was looking at it a week ago'

3.4.223. Completive: Shows action as completed.

The majority of instances correspond to English past tense, though other instances simply show contingent action, the time dependent on further context.

?iháve 'he broke it'

?ihávepíríbo rómû' 'I saw him before he broke it'

?iháve ?ihe:ri rómû' 'I saw him when he broke it'

?iháve ?ihe:ri rómúní 'I'll see him when he breaks it'

?iháve ?ihe:ri rómunde' 'I see him whenever he breaks it'

3.4.224. Potential: Indicates action not yet started.

Occurs with obligatory suffix  $\sqrt{-í}$  potential. Some approximate English equivalents are:

Future: dómúní 'I'll look at it'

Hortative: (ya)<sup>65</sup> ?ê:múni 'let's look at it'

Polite imperative: nâ:múni 'look at it'

Negative imperative: winâ:múni 'don't look at it'

3.4.225. Imperative: Used only for direct commands.

námú'ri 'look at it'

?ópi:ve 'go out'

3.4.226. Combining: Used (a) as an insert between verb prefix and one of the other principal parts of another verb set; (b) with xê:má: and gít'ó:, to form a yet-to-be-accomplished concept (usually translated as a future); (c) as a verb with certain obligatory suffixes in non-agentive contexts; and (d) in non-verbal compounds with other roots and/or affixes.

(a) napywæpi: 'he went out to look'

(b) dópywæxê:má: 'I'm going to look at it'

(c) naxaveri: 'it broke'

(d) pywæ?i 'mirror'

3.4.227. Stative: Translates as 'it is . . . -ed'

naxa?ven 'it is broken'

napy?waen 'it is seen'

3.4.23. Classes. Verbs may be divided into two classes, S and A, for stative and active,<sup>66</sup> on the basis of the pronominal prefixes, collectively referred to as  $\sqrt{\text{VP}}$ -, which they contain. Chart 6 lists these prefixes in sets established on the basis of a list of frames yielding cross reference criteria which will be explained in chapter IV. Each prefix set is numbered and will be referred to by its number preceded by "p.s."

3.4.231. S verbs contain prefixes from p.s. 1 and 2. The metalinguistic reference of S verbs is, in general, to identity, quality, feeling, condition, position, and motion. The verb bases from which they are formed are either the combining and stative forms of verb sets whose other bases form A verbs (v.s. 1-11, 13-17, 19-34, 36-46 chart 5); or are all or most of the forms in other verb sets (v.s. 12, 18, 35, 47-54). The exceptions in the latter group are verbs of motion (v.s. 12, 35, 50-52) and 'become' (v.s. 49), the imperative bases of which occur with p.s. 4. In some instances there is a recognizable relationship, both in form and meaning, between two verb sets, one of which has a stative base, the other of which has several bases which form S verbs (v.s. 11 and 12, 17 and 18); or between the former type and a set which comprises only a stative (v.s. 16 and 53).

S verbs may be further subdivided on the basis of their use of either p.s. 1 or p.s. 2.

3.4.2311. S.1 verbs contain prefixes from p.s.1

?omaen 'I'm going' (v.s. 51)

naxa?ven 'it's broken' (v.s. 8)

3.4.2312. S.2 verbs contain prefixes from p.s. 2.

The bases which participate are exactly the same as those found in S.1, except for the addition of v.s. 54,  $\sqrt{?}ore$  'forget', a stative form, and its subset derivatives.

dîmmaen 'something of mine went'

?unxa?ven 'something of his is broken'

?û?óre 'you forgot'

## Chart 6.--Verb Pronominal Prefix Sets

<u>Set No.</u>	<u>Prefixes</u>	<u>Frames</u> (from chart 12)
1.	?o ?y na ga da gi ?í di	1
2.	dîn ?ý ?ûn gáen dáen gín dîn	2,3
3.	dé: bi ?i ?aen daen ?íví ?úví díví	4
4.	?ó bá bí	5
5.	don	6, 9
6.	maen (=gaen)	6,8,9,10
7.	dôn ?ôn wîn wôn	14, 18
8.	mân dîn <sub>2</sub>	14,17,18,19
9.	dó nâ:	13
10.	?ó: wí wó:	12
11.	dí	12,15
12.	dovâen	13,14,18
13.	?ovâen	13,14,16,17, 18,19
14.	dovê: wâen wê: wovâen wovê:	12,14,18
15.	?ovê:	12,14,15,17, 18,19
16.	?áen ?ê: dáen bîn	6,9,13,14,18
17.	?i <sub>2</sub>	6,7,11
18.	dê:	6,9,13,18
19.	ná	16
20.	bîn	8,10,16,17,19

Set 3: ?íví and díví are sometimes ?í: and dí:. ?úví is ?óví in SJ.

Set 6: maen and gaen seem to be completely interchangeable, though some speakers tend to prefer one or the other.

Set 12: ?ovâen is ?ovân for some speakers.

Set 16: ?ê: is ?î: for some speakers.

3.4.232. Class A verbs contain p.s. 3-19. These verbs are parallel in metalinguistic content, for the most part, to English transitive verbs. Of the verb sets listed in chart 5, class A bases include the forms not listed above for class S: the habitual, progressive, completive, potential, and imperative forms of v.s. 1-11, 13-17, 19-34, 36-46; and the imperatives of v.s. 12, 35, 49, 52. A verbs may be subdivided in a manner similar to that for S verbs, by specific p.s. which they contain.

3.4.2321. Class A.1 includes those verbs that contain p.s. 3,5,7,9,10,12,14,16,17,18. Their bases are the habitual, progressive, completive, and potential of v.s. 1-11, 13-17, 19-34, 36-46. There are three subclasses:

A.1.a verbs contain p.s. 7, 12, 14, 16, and bases from v.s. 1-11, 13-17, 19-34, 36-46.

dônʔan 'I gave it to him' (p.s. 7, v.s. 31)

dovê:wáʔánde' 'I pay them' (p.s. 14, v.s. 14)

A.1.b verbs contain p.s. 5, 9, 10, 17, 18, and bases from v.s. 1-3, 5-11, 13-17, 19-30, 32-34, 36-46.

dompa: 'I made it for myself' (p.s. 5, v.s. 41)

dê:cʔúre 'they brought it in' (p.s. 18, v.s. 11)

A.1.c verbs contain p.s. 3 and bases from v.s. 1-9, 5-10, 13-17, 19-30, 32-34, 36-46.

dé:múnde' 'I'm looking at myself' (v.s. 19)

bikʔowa 'you cut your hair' (v.s. 2)

3.4.2322. Class A.2 includes those verbs that contain p.s. 4, 19, 20. Their bases are the imperatives of v.s. 1-11,

13-17, 19-34, 36-46, and of 12, 35, 49-52. There are two subclasses:

A.2.a verbs contain p.s. 4 and bases from v.s. 1-3, 5-10, 12-17, 19-30, 32-35, 36-46, 49-52.

?ósoge 'sit down' (v.s. 10)

báwínú 'stand up (du.)' (v.s. 16)

A.2.b verbs contain p.s. 19 and bases from v.s. 1-3, 5-11, 13-17, 19-30, 32-34, 36-46.

náwí: 'stir it' (v.s. 26)

nádâe: 'taste it' (v.s. 24)

A.2.c verbs contain p.s. 20 and bases from v.s. 1-11, 13-17, 19-34, 36-46.

bimp<sup>?</sup>ire 'fill (du/pl) it!' (v.s. 9)

binhó'gf. 'get (du/pl) them!' (v.s. 24)

3.4.2323. Class A.3 includes those verbs that contain p.s. 6,8,11,13,15. Their bases are the habitual, progressive, completive, potential, and imperative of v.s. 1-11, 13-17, 19-34, 36-46. There are two subclasses:

A.3.a verbs contain p.s. 8, 13, 15, and bases from v.s. 1-11, 13-17, 19-34, 36-46.

mânGa° 'break it for him' (p.s. 8, v.s. 23)

?ovê:hon 'somebody is taking them (or, somebody is taking it for them' (p.s. 15, v.s. 33)

A.3.b verbs contain p.s. 6, 11, and bases from v.s. 1-3, 5-11, 13-17, 19-30, 32-34, 36-46.

maenk<sup>?</sup>ô: 'eat (it)!' (p.s. 6, v.s. 40)

díxu:ní 'he'll bite me' (p.s. 11, v.s. 32)

3.4.233. Class membership of verb bases.



3.4.2331. Chart 7 recapitulates the information given for the various verb classes and subclasses. It manifests the fact, mentioned in sec. 3.4.2312, that S.1 and S.2 verbs contain exactly the same bases except for set 54 which typifies a very small group of verb sets in S.2.<sup>67</sup> The same type of information will be seen for bases forming class A verbs. V.s. 12, 35, 49-52 are unique in that only their imperative bases occur in class A, and then with only one set of prefixes. Bases from v.s. 11 are excluded from membership with corresponding bases in v.s. 1-3, 5-10, 13-17, 19-30, 32-34, 36-46 only by their failure to appear with p.s. 3,4. Verbs similar to those formed from v.s. 4, 31 are quite limited in number-- I have but one other such set in my data.

There would be a few modifications of the above scheme if metalinguistic restrictions of form were also considered. For example, ?óhave 'break yourself' (as a piece of pottery) would hardly be expected to occur in normal discourse; yet in some sort of a tale involving personified pottery it might.

A very few modifications involving an occasional member of a p.s. and a few verb bases would have to be made for more formal reasons. While the forms ?ósoqe 'sit down' and básoge 'sit down (du.)', from p.s. 4 and v.s. 10, both occur, \*bísoqe could not occur, since √bí- implies a plural and √/soqe implies a non-plural. In this particular case, a verb base from the plural of another set would be used-- bík<sup>7</sup>wó 'sit down (pl.)'. (Note also 36 and 17, 45 and 27. A half dozen or so such pairs exist.)

Chart 7.---Verb Classes

Verb Classes	Prefix Sets	Verb Bases and Verb Set Numbers					Imperative						
		Combining Stative	All but Imperatives	All Bases	All Bases	All Bases	Group v	Group v1	Group v11	Group ix	Group ix	Group ix	
		Group 1 1-11, 13-17, 19-34, 36-46	Group 11 12, 35 49-52	Group 111 18, 47, 48, 53	Group 1v 54								
S.1	1	x	x	x									
S.2	2	x	x	x	x								
		Habitual, Progressive, Completive, Potential											
		Group v 1-3, 5-10 13-17, 19-30 32-34, 36-46	Group v1 11	Group v11 4, 31	Group v11 1-3, 5-10, 13-17, 19-30 32-34, 36-46								
A.1.a	7, 12, 14, 16	x	x	x									



3.4.2332. There is, in my data, one instance of a verb set whose individual bases show overlap in participation in both S and A verb words,<sup>68</sup>  $\sqrt{da}$  'want, like' is parallel to sets such as 46a, 47, 48, 53, 54 which display only a stative and can, from the stative, include a subset involving a potential (and, in some cases, a combining) form.  $\sqrt{da}$  and its potential ( $\sqrt{da}$ :) may each occur in both class S and class A verb words.

?oda' 'I want' ?oda':í 'I will want'

dóda' 'I like him' dóda':í 'I will like him'

3.4.24. Affixes. Chart 8 is a display of all affixes that have been found with verbs.<sup>69</sup> It will be seen that all prefix positions contain but one morpheme, but that some of the suffix positions contain more than one morpheme. Under method A, membership within a position has been determined by charting from the end of the word in to the base. Thus,  $\sqrt{-bo}$  is considered to be in final order inasmuch as no affix follows it, even though the last affix that may actually precede it is  $\sqrt{-ri}$ . Under method B, positional membership has been determined by charting from the base out to the end of the word. The only advantage of one method over the other in respect to the alignment of semantically similar affixes within a slot is that in method A  $\sqrt{-\hat{a}n}$  and  $\sqrt{-\hat{a}}$ , emphasizees, fall together. It must be emphasized that this is a composite chart--no individual principal part occurs with all the affixes shown. Further, the affixes themselves involve mutual dependencies and exclusions (sec. 3.4), and in some cases, particular de-

Chart 8.--Verb Affixes

Method A

6	5	4	3	2	1	<u>Base</u>	1	2	3	4	5	6	7	8
t1	wf	VP	p1	ra	wé:		r1:	f	pf	r1	rə?	ân	kun	ho°
							r1°					á	waen	bo
														an
														há°

Method B

6	5	4	3	2	1	<u>Base</u>	1	2	3	4	5	6	7	8
t1	wf	VP	p1	ra	wé:		r1:	f	pf	r1	rə?	ân	kun	ho°
							r1°			an	á	há°		
														waen bo

pendencies or exclusions are linked to a specific principal part. All of these combinations have not been exhaustively determined, but in the following description of individual affixes some of the more important details are noted.

3.2.241. Obligatory affixes. In addition to the pronominal prefix obligatory to all verbs (sec. 3.4.21), the potential and combining forms also require a suffix.

The potential always occurs with  $\sqrt{-í}$  potential. Examples have been given in sec. 3.4.224. The potential built from statives likewise requires  $\sqrt{-í}$ .

načá?ní 'he will be there' (v.s. 46a)

naxa?vé:ní 'it will (still) be broken' (v.s. 8 <  
xa?vé:n)

The combining form, when used in verb words,<sup>70</sup> must occur with either  $\sqrt{-ri}$ : result or  $\sqrt{-ri}$ ' habitual result.

naxaveri: 'it broke'

naxaveri' 'it breaks (it is breakable)'

nača°ri: 'it spilled'

nača°ri' 'it spills'

3.4.242. Optional affixes. The optional affixes that occur with all verbs, regardless of base, and have therefore been listed as criteria for delimiting verbs as a class, are  $\sqrt{wé:-}$  'again' and  $\sqrt{pi-}$  'self'. They occur between the pronominal prefix and the verb base.

náwé:mú'rí 'look at it again'

nápimú'rí 'look at it yourself'

dówé:mû' 'I saw it again'

dópimû' 'I saw it myself'

The occurrence of other optional affixes is in part limited by the principal part from which the verb base is drawn. Imperatives are the most restricted in their affixation: in my data they occur with no other affixes than  $\sqrt{wé}$ - and  $\sqrt{pi}$ -.

$\sqrt{-í}$  potential, elsewhere obligatory, is optional on the combining form with  $\sqrt{-ri}$ : ( $\mathcal{A}/\sqrt{-rí}$ ;) result.

naxaverí:f 'it will break'

nača'rí:f 'it will spill'

Optional affixes which occur with all verb bases, but are restricted to occurrence with verbs are:

$\sqrt{wí}$ - negative. Occurs directly before the pronominal prefix, and as indicated above, has the suffix  $\sqrt{-pí}$  as an obligatory concomitant.

wírómu'pí 'I didn't see it'

wínamaempí 'he's not going'

$\sqrt{ra}$ - 'surely'. As with  $\sqrt{wé}$ : 'again' and  $\sqrt{pi}$ - 'self', this prefix occurs between the pronominal prefix and the verb base.

dóramunde' 'I'm surely looking at it'

naramaen 'he's surely going'

Optional affixes which may occur with all verb bases, though not restricted to occurrence with verbs are:

$\sqrt{ti}$ - question marker. May be affixed to any word, including verbs (see fn. 41).

tinamaen 'is he going?'

tirómû° 'did I see him?'

√-pí negative. Ordinarily occurs with √wí- negative, but may also occur in subordinate clauses with either √-ri (â/rí) source/agent, or √-waen contingency marker plus √-bo emphasizer.

wínamae:pí 'he didn't go'

namae:pírí rómô° 'I saw him because he didn't go'

namae:píwaembo rómô° 'he didn't go, but I saw him'

√-ri source/agent marker. Makes a dependent clause of a verbal form.

namae:ri rómû° 'I saw him go'

namaendi rómû° 'I saw him going'

Although the second (non-dependent) verb is usually expressed, it is sometimes omitted when it is understood from the non-linguistic context.

√-rə? 'just, only'. In full verbal forms this affix appears only in subordinate clauses (i.e. with √-ri), though it also occurs with a non-verbal use of the combining form.

namaendirə? ʔó:mû° 'he saw him just going'

pywəerə? ʔi?o° 'he's just looking'

√-ân (â/—mân) emphasizer. Occurs only following √-rə?.

namaendirə?mân ʔó:mû° 'he saw him just going, indeed'

pywəerə?mân ʔi?o° 'he's just looking, indeed'

√-á emphasizer. Occurs only with √-ri.

namae:rá rómû° 'I saw him go, indeed'



√-kun 'surely'. Occurs only following √-ân or √-á emphasizer.

namae:ákun 'he surely went'

namae:rira?mânkun dómû' 'I saw him surely just going, indeed'

√-waen contingency marker. The use of this affix generally implies another action which follows the action of the verb to which it is attached (whether the second action is expressed or not). When √-waen is affixed by itself, the whole situation usually occurs in the past.

dómúndewaen 'I was looking at it'

dómúniwaen 'I would have seen it'

However, some cases of √-waen with the potential may translate as 'I hope . . .', depending on the context.

?ifo?namiwaen 'I hope it snows'

?imúniwaen 'I hope he sees it' (or, as above, 'he would have seen it')

When waen is followed by √-bo emphasizer, the construction would translate as 'even though . . .'

namaenwaembo wirómúndepí 'even though he's going, I don't see him' (or 'he's going, but I don't see him')

√-bo emphasizer. Either √-ri, or √-pí negative plus √-ri, or √-waen (illustrated above under √-waen and √-pí) is also required.

namaendibo rómû' 'I saw him go, indeed'

namae:píribo rómû' 'I saw him before he went'<sup>71</sup>

√-an (â/-?an) question marker. Occurs following √-pí negative. The example in sec. 3.4, which involved √ti

question marker,  $\sqrt{wi}$ - negative, and  $\sqrt{-pi}$  negative, along with  $\sqrt{-an}$  (tiwínawé:mae:pi?an 'didn't he go again?') illustrated the necessity of  $\sqrt{-an}$  when  $\sqrt{ti}$ -,  $\sqrt{wi}$ -, and  $\sqrt{-pi}$  are present. An exception to this involves the presence of  $\sqrt{-waen}$  contingency marker, which would exclude the presence of  $\sqrt{-an}$ .

tiwínamaempiwaen 'wasn't he going?' (not \*tiwínamaem-pi?anwaen)

$\sqrt{-an}$  may also be used with  $\sqrt{-pi}$  alone to form what is roughly equivalent to a rhetorical question in English.

namaempi?an 'he's going, isn't he?'

dómû?pi?an 'I saw him, didn't I?'

$\sqrt{-ho}$ ° emphazier. Immediately follows the verb base, or follows  $\sqrt{-pi}$ ,  $\sqrt{-ri}$ ,  $\sqrt{an}$ , or  $\sqrt{-kun}$ .

namae:ho° 'he's already gone'

namaendiho rómû° 'I saw him going, indeed'

$\sqrt{-há}$ ° consecution marker. Occurs only after  $\sqrt{-ri}$  plus  $\sqrt{-á}$  in a subordinate clause.

dómû?ráhá namae:° 'I saw him and then he went'

### 3.4.3. Nouns.

3.4.31. Definition. Nouns are words which may occur with the possessive suffix  $\sqrt{-vi}$ , the allomorphs of which are described in sec. 3.3.11.

3.4.32. Classes. Nouns are divided into two classes: Class N, which is affixed for set with set marker  $\sqrt{-n}$  (sec. 4.2); class non-N, which is not so affixed. The rationale for sub-classification of nouns by total form rather than by root plus potential for affixation (as if e.g., kó?ô: and p̄æ:

were to be assigned to two different classes because the former may be affixed for set and the latter may not)--even though some roots participate in both classes--will be seen in Chapter IV.

3.4.321. Class non-N is by far the larger of the two classes, comprising practically all of the nouns in Tewa. They are, for the most part, mono- or di-syllabic, though some tri- and a very few tetra-syllabic nouns also exist.

páe:	'deer'
k'u:	'rock'
te:	'tree'
sen	'man'
círé	'bird'
kó?ô:	'aunt'
ma:hû:	'owl'
?agóyó	'star'
?o:zuwa	'rain-god'
cígówáenu	'lightning'

3.4.322. Class N nouns are a small group of words which include for the most part, designations for age-sex differentiations (usually, though not always, applied to people), kinship terms, and forms which translate as pronouns. All N nouns have counterparts in non-N nouns, i.e. the root morphemes are the same. Several age-sex and kinship terms were illustrated in sec. 3.3.161, in both their N and non-N forms. The pronouns are:

1st na?in (or nan) < na:

2nd ?un < ?u°

3rd ?in < ?i°

3.4.22 Affixes. Chart 9 is a display of affixes that occur with nouns. The discussion of chart 8 in respect to method of charting and the composite nature of the chart holds here also.

It will be noted that the prefix  $\sqrt{ti-}$  and the suffixes  $\sqrt{-ri}$ ,  $\sqrt{-ra?}$ ,  $\sqrt{-ân}$ ,  $\sqrt{-á}$ ,  $\sqrt{-kun}$ ,  $\sqrt{-ho'}$ ,  $\sqrt{-waen}$ ,  $\sqrt{-bo}$ , and  $\sqrt{-há'}$  occur with verbs also. Differences in occurrence or meaning with nouns is as follows:

$\sqrt{-ri}$  marks the subject or agent of active verbs under certain circumstances.<sup>72</sup>

sendi ?ó:nán 'the man hit him'

k?u:ri ?ó:nán 'the rock hit someone or something'  
(or 'someone hit him with a rock')

sendi k?u:ri ?ó:nán 'the man hit someone with a  
rock'

$\sqrt{-waen}$  does not occur with nouns unless  $\sqrt{-bo}$  is also present.

na:waembo yo: 'not even me'

$\sqrt{-bo}$  and  $\sqrt{-á}$  may occur attached to the noun with no other affix involved.

na:bo ?omaen 'I, indeed, am going'

na:á ?omaen 'I, indeed, am going'

$\sqrt{-há'}$  occurs only after  $-/-bá$

tina:báhá' 'me again?'

Other noun affixes are:

$\sqrt{-ge}$  locative. This suffix occurs with only a

## Chart 9.---Noun Affixes

Method A

t1	Root	1	2	3	4	5	6	7	8	9	10	11
		ge	n	gi'	á	ri	bá	bo	rə?	ân	kun	ho'
			n <sub>2</sub>				waen			á		vi
												há'

Method B

t1	Root	1	2	3	4	5	6	7	8	9	10	11
		ge	n	gi'	á <sub>2</sub>	ri	bá	bo	rə?	ân	kun	ho'
			n <sub>2</sub>	vi						há'	á	
												waen

certain list of roots, and indicates 'place of . . . '.

p<sup>?</sup>o:ge 'Santa Fe' (lit. 'place of water')

wángé 'Jemez pueblo'

√-n<sub>2</sub> 'inhabitant(s) of'. Occurs with many place names.

wángén 'inhabitant(s) of Jemez Pueblo'

xap<sup>?</sup>on 'inhabitant(s) of Santa Clara (xap<sup>?</sup>o) Pueblo'

That √-n<sub>2</sub> is different from √-n set marker is shown by the occurrence of √-n<sub>2</sub> with singular, dual, and plural syntactic situations involving the same root--which is never the case for √-n (see sec. 4.2).

wángénnân namu: 'he's a Jemez person'

" damu: 'they (du.) are Jemez people'

" dimu: 'they (pl.) are Jemez people'

√-n set marker. Illustrated as to form in sec. 3.3.161 and as to meaning in sec. 4.2.

√-gî° 'for' Indicates benefaction.

na:gî° rîmpa: 'he made it for me'

hæ?1 wángéngî° namu: 'it's for that Jemez person'

√-ví possessive. No other suffix may occur after √-ví.

naví 'my'

sembí 'man's'

√-á<sub>2</sub> series marker. Its status as separate from √-á emphazier is shown in sec. 3.3.15.

√-bá° 'also'.

na:bá ?omaen 'I'm going too'

tina:báhá' 'me again?'

3.4.4. Class Z words are those that are not particles, verbs, or nouns. Unlike particles, they are affixable with such suffixes as  $\sqrt{-á}$ ,  $\sqrt{-ân}$ ,  $\sqrt{-bo}$ , and  $\sqrt{-ho}$ , all emphasers,  $\sqrt{-rə}$  'just, only',  $\sqrt{-an}$  question marker, locatives  $\sqrt{-we}$ , and  $\sqrt{-ge}$ , all mentioned above; and  $\sqrt{-gí}$ , meaning uncertain. But unlike nouns and verbs they do not occur with the specific affixes which delineate those classes. They comprise words whose English equivalents involve time, location, manner, interrogation, etc.

?íve 'inside' cf. ?íveri 'from inside'

háeñú 'how much' cf. háeñúan (našəe?mu:)

'how much (is it)?'

hí:wó 'good', cf. híwó?ngí naná 'it's nice  
weather'

Class Z words could undoubtedly be subclassified by positive or negative criteria of specific affix occurrence (e.g., ?íve occurs with  $\sqrt{-ri}$ , háeñú does not), but such detailed subdivision is not attempted here.

#### IV. TRANSLATION PROBLEMS

4.1. Introduction. It has been stated (sec. 2.1) that English glosses for certain Tewa forms, namely those involving noun number and pronominal verb prefixes, would be either supplied or further explicated in this chapter. In a sense, the statement that English translation values would be given in simple form only is, short of an extensive cross-linguistic lexicon, scarcely more than a truism. But the particular area of difficulty lies in the matter of metalinguistic number as it relates to various features of the morphology of nouns and other forms which translate as nouns, adjectives, and demonstratives; and to the verb pronominal prefix as it stands in cross-reference<sup>73</sup> to these. This particular area of complexity is shared typologically--though the details are different--by the entire Kiowa-Tanoan language group.

For Kiowa, analyses by Harrington (Vocabulary of the Kiowa Language), Wonderly, et al. ("Number in Kiowa"), and Merrifield ("Classification of Kiowa Nouns") followed much the same pattern: the equating of Kiowa number concepts with those of English, as a result of the failure to distinguish between morphemic, syntactic, and semological levels. For example, the scheme of Wonderly, et al. is as follows:



Class	Basic (non-affixed)	Inverse (affixed)	Affixes		
			s	d	p
I	dual-sg.	pl.	-	-	-g <sup>o</sup>
II	dual-pl.	sg.	-g <sup>o</sup>	-	-
III	dual	sg.-pl.	-g <sup>o</sup>	-	-g <sup>o</sup>
IV	sg.-du.-pl. (never affixed, subclassified by cross-reference to verb prefixes)	-	-	-	-

In addition, there are some nouns, similar to Class IV in that they are non-affixed, but which are placed in Class I or II on the basis of their agreement with demonstratives and verb prefixes.

In her dissertation on the Kiowa language, Edith Crowell Trager's "boldly innovating analysis" (G.L. Trager, "Taos IV: Morphemics, Syntax, Semology in Nouns and in Pronominal Reference," 212) introduces the terms "symmetry" and "asymmetry" to point out that Kiowa nouns morphemically make only a two-way distinction--they are either affixed by  $\sqrt{-g^o}$  (asymmetry), or they are not so affixed (symmetry). She defines symmetry as non-individualized, non-separate, and asymmetry as individualized or separate--deriving the concept of "symmetry" from the consistent marking of duality by a form not affixed with  $\sqrt{-g^o}$ . The main point is that what is associated with a number category in one morphemic noun class is associated with a different number category in another noun class. The term "associated with" is purposely chosen here, rather than "signals", since number is not morphemically but syntactically delineated.<sup>74</sup>

Preliminary investigation of Towa nouns reveals a similar system, except that duality seems to be unambiguously marked morphemically. Two other morphemes are variously associated with singularity or plurality, depending on the (syntactic class of the) noun.

4.2. Number in Towa nouns. For a fuller treatment of the phenomenon in Tewa, we will deal with not only simple morphemic nouns (sec. 3.4.31), but with compound nouns--forms compounded with  $\sqrt{?i}$  3rd person (sec. 3.3.221), some of which function as syntactic nominals, some as adjectivals, some as demonstratives. For maximum differentiation of forms we will use a group of adjectivals that occur in paired roots, one of which occurs in singular collocations, the other in non-singular. In addition, we will choose verb bases that occur in pairs, one of which is used in plural contexts, the other in non-plural (sec. 3.4.2331). To define the number categories of singular, dual, and plural, the number words  $wi$  'one',  $wépi?$ in 'two', and  $po:ye$  'three' will be used.

Chart 10 is set up in elicitation form, derived from the English frame 'this/these (number) big (nominal) fell': e.g., 'this one big stone fell', 'these two big sticks fell', etc. (with nominal and adjectival in reverse order in Tewa). Part A groups the utterances according to noun root in the nominal slot, with consideration of number then a secondary factor in the alignment of the utterances. Part B aligns the utterances with number as the primary criterion, all utter-

Chart 10.--Cross-reference in Syntactic Slots

<u>Part A</u>					
?o?i	wí°	cé	he:ʔi	naketʔá	(cé 'dog°')
?o?in	wíye	cé	heʔennin	daketʔá	
?o?im	po:ye	cé	heʔennin	diyemu	
?o?i	wí°	kóʔô:	he:ʔi	naketʔá	(kóʔô: 'aunt°')
?o?in	wíye	kóʔô:ʔin	heʔennin	daketʔá	
?o?im	po:ye	kóʔô:ʔin	heʔennin	diyemu	
?o?i	wí°	xa°wi	he:ʔi	naketʔá	(xa°wi° 'singer°')
?o?in	wíye	xa°win	heʔennin	daketʔá	
?o?im	po:ye	xa°win	heʔennin	diyemu	
?o?i	wí°	kʔu:	he:ʔi	naketʔá	(kʔu: 'rock°')
?o?in	wíye	kʔu:	heʔennin	daketʔá	
?o?i	po:ye	kʔu:	heʔendi	nayemu	
?o?i	wí°	puwæʔi	he:ʔi	naketʔá	(puwæʔi 'mirror°')
?o?in	wíye	puwæʔin	heʔennin	daketʔá	
?o?i	po:ye	puwæʔi	heʔendi	nayemu	
?o?in	wépiʔin	te:	he:ʔin	naketʔá	(te: 'tree°')
?o?in	wíye	te:	heʔennin	daketʔá	
?o?i	po:ye	te:	heʔendi	nayemu	
?o?in	wépiʔin	təʔnin	he:ʔin	naketʔá	(təʔnin 'book°')
?o?in	wíye	təʔnin	heʔennin	daketʔá	
?o?i	po:ye	təʔdi	heʔendi	nayemu	

## Chart 10.--Continued

Part B

?o?1	wí <sup>o</sup>	cé	he:ʔi	naket <sup>ʔ</sup> á
?o?1	wí <sup>o</sup>	kó <sup>o</sup> ô:	he:ʔi	naket <sup>ʔ</sup> á
?o?1	wí <sup>o</sup>	xa <sup>o</sup> wi	he:ʔi	naket <sup>ʔ</sup> á
?o?1	wí <sup>o</sup>	k <sup>o</sup> u:	he:ʔi	naket <sup>ʔ</sup> á
?o?1	wí <sup>o</sup>	pywæʔi	he:ʔi	naket <sup>ʔ</sup> á
?o?in	wépiʔin	te:	he:ʔin	naket <sup>ʔ</sup> á
?o?in	wépiʔin	təʔnin	he:ʔin	naket <sup>ʔ</sup> á
?o?in	wíye	cé	he?ennin	daket <sup>ʔ</sup> á
?o?in	wíye	kó <sup>o</sup> ô:ʔin	he?ennin	daket <sup>ʔ</sup> á
?o?in	wíye	xa <sup>o</sup> win	he?ennin	daket <sup>ʔ</sup> á
?o?in	wíye	k <sup>o</sup> u:	he?ennin	daket <sup>ʔ</sup> á
?o?in	wíye	pywæʔin	he?ennin	daket <sup>ʔ</sup> á
?o?in	wíye	te:	he?ennin	daket <sup>ʔ</sup> á
?o?in	wíye	təʔnin	he?ennin	daket <sup>ʔ</sup> á
?o?im	po:ye	cé	he?ennin	diyemu
?o?im	po:ye	kó <sup>o</sup> ô:ʔin	he?ennin	diyemu
?o?im	po:ye	xa <sup>o</sup> win	he?ennin	diyemu
?o?1	po:ye	k <sup>o</sup> u:	he?endi	nayemu
?o?1	po:ye	pywæʔi	he?endi	nayemu
?o?1	po:ye	te:	he?endi	nayemu
?o?1	po:ye	təʔdi	he?endi	nayemu

ances involving singularity being grouped together, likewise those involving duality and plurality. In both parts the nominals themselves are kept in the same relative order.

The following correlation between, or restrictions in, the occurrence of number words with various morphemes may be summarized thus:

- (1) Number words plus roots in the demonstrative and nominal slots: no restriction.
- (2) Number words plus the adjectival root, verb prefix, or verb base: certain restrictions which yield number categories.

<u>form</u>	<u>number word(s)</u>	<u>number category</u>
√/he:	wî°	singularity
√/he?en	wíye/po:ye	non-singularity
√na-	wî°/po:ye	non-duality
√da-	wíye	duality
√di-	po:ye	plurality
√/ket'á	wî°/wíye	non-plurality
√/yemu	po:ye	plurality

- (3) Number words plus √-n set marker: No correlation in general. When, however, we compare the presence of √-n with its absence, we find that, for duality, its presence is required on any form with which it is possible for it to occur: demonstratives, adjectives, and all nominals except, by definition, nouns not affixed for set. For singularity or plurality, its presence in any slot depends on the specific nominal involved.

Drawing upon the analyses of Kiowa and Taos insofar as these have relevance for the above data, the following is proposed as a possible explanation for Tewa:

Morphemically, all nouns (plain and compound) marked with  $\sqrt{-n}$  are semologically "sets"; all nouns not so marked are semologically "entities." Thus, e.g.,  $kó?ô:$  'aunt' is an entity,  $kó?ô:?in$  'aunts' is a set of such entities--a pair or a group.  $tə?in$  'book' is a set, perhaps a set of parts, such as cover, pages, etc.;  $tə?di$  'books' is an entity--a group or collection of such sets. Unaffixed roots ( $cé$  'dog',  $k'u:$  'rock',  $te:$  'tree') are not conceived of as sets, but are always entities. When coupled with  $wí$  'one', they are a unit of singularity; when coupled with  $wíye$  'two', they are taken as a pair; when coupled with  $po:ye$  'three', they are a collective entity: 'a pack of dogs', 'a pile of stones', a grove of trees'. The demonstratives and adjectives which are in cross-reference to these nominals themselves reflect "entity-ness" or "set-ness." A collocation such as  $?o?i k'ó?ô:$  would be 'entity of "thatness" as related to entity of "aunt-ness"';  $?o?in k'ó?ô:?in$  'set of "thatness" as related to set of "aunt-ness"'. It will be seen that such translations as the immediately foregoing do not reflect actual number (i.e., singular, dual, plural). How, then, is number signalled in Tewa? Chart 11 is given to show the interrelationships between morphemic, syntactic, and semological categories, with demonstratives and  $\sqrt{VP}$ -of verb prefix set #1 (Chart 6) chosen as cross-referents.

Chart 11--Morphemic, Syntactic, and Semological Categories  
of Nouns

Noun Classes (Morphemic)

X = not affixed by  $\sqrt{-n}$

N = affixed by  $\sqrt{-n}$

Nouns occurring in the  
nominal slot in Chart 10:

xa'wi' pywæ?i' tɔ?di'  
cé k'u: te: kó?ô:

kó?ô?in xa'win tɔ?nin  
pywæ?in

Nominal Classes (Syntactic)

	<u>Demonstr.</u>		<u>Nominal</u>	
E	X	:	X	cé kó?ô: k'u: te: xa'wi' pywæ?i' tɔ?di'
S <sub>1</sub>	N	:	X	cé k'u: te:
S <sub>2</sub>	N	:	N	kó?ô:in xa'win tɔ?nin pywæ?in

Nominoidal Classes (Syntactic)

	<u>Synt. Class</u>		<u>Pro. Vb. Pref.</u>	
Nu <sub>1</sub>	E	:	na-	cé kó?ô: k'u: te: xa'wi' pywæ?i' tɔ?di'
Nu <sub>2</sub>	S <sub>1</sub>	:	na-	te:
Nu <sub>3</sub>	S <sub>2</sub>	:	na-	tɔ?nin
Du <sub>1</sub>	S <sub>1</sub>	:	da-	cé k'u: te:
Du <sub>2</sub>	S <sub>2</sub>	:	da-	kó?ô?in xa'win tɔ?nin pywæ?in
Pl <sub>1</sub>	S <sub>1</sub>	:	di-	cé
Pl <sub>2</sub>	S <sub>2</sub>	:	di-	kó?ô:in xa'win

## Chart 11.--Continued

Noun-collocation classes (Semological)

A <sub>1</sub> = Nu <sub>1</sub> & Du <sub>1</sub> & Pl <sub>1</sub>	oé
A <sub>2</sub> = Nu <sub>1</sub> & Du <sub>2</sub> & Pl <sub>2</sub>	kó?ô: & kó?ô:ʔin za'wi' & za'win
I-dis <sub>1</sub> = Nu <sub>1</sub> & Du <sub>1</sub>	k'u:
I-dis <sub>2</sub> = Nu <sub>1</sub> & Du <sub>2</sub>	pywæʔi & pywæʔin
I-ag <sub>1</sub> = Nu <sub>1</sub> & Du <sub>1</sub> & Nu <sub>2</sub>	te:
I-ag <sub>2</sub> = Nu <sub>1</sub> & Du <sub>2</sub> & Nu <sub>3</sub>	təʔdi' & təʔnin

Symbols:

N = nouns suffixed with √-n set marker

X = nouns not suffixed with √-n

E = Entity

S = Set

Nu = Numberless

Du = Dual

Pl = Plural

A = Animate<sup>75</sup>

I-dis = Inanimate distributive

I-ag = Inanimate aggregate

: = collocated with<sup>76</sup>

& = paired with



It is designed to show that number--apart from the obvious expedient of using an actual number word as such--emerges in different ways, depending on the semological class of the noun and the morphemes in syntactic collocation with it. Semological Class A nouns, for example, show their plurality by the presence of di-.<sup>77</sup> For A nouns, the only possible collocation of number words could be wi° with Nu<sub>1</sub> or Nu<sub>2</sub>, wiye with Du<sub>1</sub> or Du<sub>2</sub>, and po:ye with Pl<sub>1</sub> and Pl<sub>2</sub>. For I-ag nouns the presence of Nu<sub>2</sub> or Nu<sub>3</sub> dictates the necessity of wépf?in, and then Nu<sub>1</sub> would require po:ye--and, of course, Du<sub>1</sub> or Du<sub>2</sub> would require wiye. Actually, to separate class A from the other classes would not have even required as many steps as were used: the simple occurrence of a given root with the three prefixes na-, da-, and di-, would have immediately signalled it as class A, with na-, da-, and di- then automatically signalling sing., du., and pl., respectively. Likewise for I-ag<sub>2</sub> the occurrence of √-n on tɔ?nin in conjunction with na- (yielding syntactic N<sub>3</sub>) would have delineated tɔ?di°--tɔ?nin as a different class, with the √-n plus na- signalling singular, X plus na- (Nu<sub>1</sub>) plural, and Du<sub>1</sub> or Du<sub>2</sub> dual. But I-ag<sub>1</sub> nouns require the presence of the demonstratives, since te: : na- by itself could be either singular or plural, whereas ?c?i te: : na- with ?c?in te: : na- immediately classes te: with tɔ?nin semologically, and consequently yields the same number values as just outlined. But having brought the I-dis nouns to the same point in analytical procedure, the amount

of information yielded is that I-dis is a different class from either A or I-ag because Nu<sub>1</sub> is not matched by either a P1 or a different subscript Nu (i.e., Nu<sub>2</sub> or Nu<sub>3</sub>); and that there is a differentiation between duality and non-duality (which there is in all classes anyway). But singularity and plurality is still not differentiated--?o?i k<sup>?</sup>u: : na- or ?o?i puwæ?i : na- can be either singular or plural. The further inclusion of either the adjective or verb base would be necessary for distinguishing between these. Thus ?o?i k<sup>?</sup>u: hæ:ʔi : na- coupled with ?o?i k<sup>?</sup>u: heʔendi : na- shows the former to be singular, the latter to be plural; or ?o?i k<sup>?</sup>u: naket<sup>?</sup>á with ?o?i k<sup>?</sup>u: nayemu yields the same information. With adjectivals or verb bases that do not, as do he:--heʔen and ket<sup>?</sup>á--yemu, exist in pairs, such information, of course, is not possible, and only the overt inclusion of a number word can clarify the actual number of the referent.

#### 4.3. Pronominal verb prefixes.

4.3.1. Basis for classification. The twenty sets of  $\sqrt{\text{VP}}$ - in chart 6 were established primarily on the basis of their cross-reference with nouns and certain suffixes which occur with nouns. In a few cases the verb principal parts afford a further basis for classification. Chart 12 lists the frames which yield the  $\sqrt{\text{VP}}$ - sets, along with the  $\sqrt{\text{VP}}$ - which fit each frame; the sets of chart 6, then, result from a collation of the information given in chart 12.

Chart 12.--Frames for pronominal verb prefixes.

<u>Frame</u>	<u>Prefixes</u>
1. N VP-1, 11, 111	?o ?y na ga da gi ?í d1
2. N-ví-N VP-1,11,111	d1n ?ý ?ún gáen dáen gín d1n
3. N Nx VP-1v	d1n ?ý ?ún gáen dáen gín d1n
4. N VP-v	dé: b1 ?1 ?aen daen ?íví ?úví díví
5. N VP-viii,xi	?ó bá bí
6. N (=)N-gí° Nx VP-v,vi	don maen ?1 ?áen dáen ?ê: b1n dê:
7. N (=)N-ví-N VP-v,vi	?1
8. N (=)N-gí° Nx VP-viii,ix	maen bin
9. N- r1 (=)N-ví-N VP-v,vi	don maen ?áen dáen ?ê: b1n dê:
10. N- r1 (=)N-ví-N VP-viii,ix	maen bin
11. N (≠)N VP-v,vi	?1 <sub>2</sub>
12. N-r1 (≠)N VP-v,vi	dovê: ?ovê: ?ó: wí wáen wê: wó: wováen wovê: dí
13. N- r1 (≠)N VP-v,vi	dó dováen ?áen ?ê: nâ: ?ováen dáen b1n dê:
14. N-r1 (≠)N Nx VP-vii	dôn dováen dovê: ?áen ?ê: mân ?ováen ?ovê: dáen b1n ?ôn w1n wáen wê: wôn wováen wovê: d1n <sub>2</sub>
15. N-r1 (≠)N VP-viii,ix	?ovê: dí
16. N- r1 (≠)N VP-viii,ix	ná ?ováen bin
17. N-r1 (≠)N Nx VP-x	mân ?ováen ?ovê: bin d1n <sub>2</sub>
18. N-r1 (≠)N-gí° Nx VP-v,vi	dôn dováen dovê: ?áen ?ê: mân ?ováen ?ovê: dáen b1n ?ôn w1n wáen wê: wôn wováen wovê: d1n dê:
19. N-r1 (≠)N-gí° Nx VP-viii, ix	mân ?ováen ?ovê: bin d1n <sub>2</sub>

An explanation of the symbols in chart 12 is as follows:

VP = any of the  $\sqrt{\text{VP}}$ - listed for the frame

Hyphen connects morphemes which act as a syntactic unit. Thus, na:-ri = the word na:ri 'I as agent'; na-ví-cé = the phrase naví cé 'my dog'.

N and Nx = noun or nominal phrase. All N which stand alone or stand before -ri, -ví, or -gî° are in cross-reference to the VP in the frame which contains them. N which occur after -ví in N-ví-N combinations are not in cross-reference to the VP.<sup>78</sup> Nx are further nominals which may occur in the frame, but which are not in cross-reference to the VP. Thus, in frame 18, na:ri ?igî° (wem fémbe:) rômpa: 'I-for-him-(a box)-I made' (= 'I made (a box) for him'), na: and ?i° are in cross-reference to  $\sqrt{\text{dôn-}}$ , because substitution of certain other nouns for either of these would result in a substitution for  $\sqrt{\text{dôn-}}$ ; but no substitution for  $\sqrt{\text{dôn-}}$  could result from any substitution for wem fémbe:.

-ri, -ví, and -gî° =  $\sqrt{-\text{ri}}$  source/agent,  $\sqrt{-\text{ví}}$  possessive, and  $\sqrt{-\text{gî°}}$  'for', respectively.

Brackets indicate that the enclosed -ri is obligatorily present<sup>79</sup> or obligatorily absent, depending on the referent of the noun which follows, and, in some cases involving two third person referents, also the noun to which it is attached. (Morphemes not so enclosed are obligatorily present.) Thus, in frame 13, na:ri ?i rômu° 'I saw him', where the ?i refers to a semological A noun; but na: ?i rômu°, where the ?i refers to a semological I-dis or I-ag.

(=) preceding an N indicates that the N must have the same referent as the first N in the frame. (≠), on the other hand, indicates that the two N can not have the same referent.<sup>80</sup>

Roman numerals refer to the groups of verb sets in chart 7.

Each frame is now illustrated, using √/maen 'going' and √/té: 'be lacking' for frames 1-3, √/ c'â° 'cut' (imperative √/c'a°) and √/?an 'gave' (imperative √/?an) as verb bases. Nx are enclosed in parentheses.

#### Frame

1. na: ?omaen 'I'm going'
2. naví cé rímmaen 'my dog is going'
3. na: (wí cé) rínté: 'I need (a dog)'
4. na: ré:c'â° 'I cut myself'
5. ?óc'a° 'cut yourself'
6. na: na:gí° (wém fé) ronc'â° 'I cut (a stick) for my-self'
7. ?i ?iví cé ?ic'â° 'he cut his dog'
8. ?y ?yúgí° (wém fé) maenc'a° 'cut (a stick) for your-self'
9. na:ri naví cé ronc'â° 'I cut my dog'
- na: naví fé ronc'â° 'I cut my stick'
10. ?yri ?uví cé maenc'a° 'cut your dog'
- ?y ?uví fé maenc'a° 'cut your stick'
11. ?i wí cé ?ic'â° 'he cut a dog'
12. na:ri po:ye cé rovê:c'â° 'I cut three dogs'
13. na:ri wí cé róc'â° 'I cut a dog'
- na: wém fé róc'â° 'I cut a stick'



## Chart 13.--Readings of Chart 12

Symbols used

I, II, III = 1st, 2nd, 3rd persons

sg, du, pl = singular, dual, plural

A = animate

Ā = inanimate (either I-dis or I-ag)

Slash (/) and comma (,) = "or"

-vī, -ri, -gī° = √-vī possessive, √-ri source/agent,  
 √-gī° 'for'

Exclamation point (!) = a complete set of the foregoing  
 (e.g. III! = all 3rd persons of  
 any class or number)

Ampersand (&) is placed between the two referents of all  
 two-referent frames.

Verb Set # (chart 6)	Prefix	Frame # (Chart 12)	Referent(s)
1	?o-	1	Isg
	?y-	1	IIsg
	na-	1	IIIAsg, IIIĀsg/pl
	ga-	1	Idu
	da-	1	IIIdu, IIIĀdu/Ādu
	gi-	1	Ipl
	?i-	1	IIpl
	di-	1	IIIĀpl

## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (Chart 12)	Referent(s)
2	dín-	2	Isg-ví III!
		3	Isg
	?ý-	2	(IIsg/pl)-ví III!
		3	IIsg/pl
	?ûn-	2	IIIAsg-ví III!
		3	IIIAsg
	gáen-	2	Idu-ví III!
		3	Idu
	dáen-	2	(IIIdu/IIIIdu)-ví III!
		3	IIIdu/IIIIdu
	gín-	2	Ipl-ví III!
		3	Ipl
	dín-	2	IIIapl-ví III!
		3	IIIapl
3	dé:-	4	Isg
	bi-	4	IIsg
	?i-	4	IIIAsg
	?aen-	4	Idu
	daen-	4	IIIdu/IIIIdu
	?íví-	4	Ipl
	?úví-	4	IIpl
	díví-	4	IIIapl



## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (Chart 12)	Referent(s)
4	ʔó-	5	IIsg
	bá-	5	IIdu
	bí-	5	IIpl
5	don-	6	Isg & Isg-gí°
		9a	Isg-ri & Isg-ví IIIAsg
		9b	Isg & Isg-ví IIIĀsg/pl
6	maen-	6	IIsg & IIsg-gí°
		8	IIsg & IIsg-gí°
		9a	IIsg-ri & IIsg-ví IIIAsg
		9b	IIsg & IIsg-ví IIIĀsg/pl
		10a	IIsg-ri & IIsg-ví IIIAsg
		10b	IIsg & IIsg-ví IIIĀsg/pl
7	dôn-	14	Isg-ri & IIIAsg
		18	Isg-ri & IIIAsg-gí°
	ʔôn-	14	IIIAs-ri & IIIAsg
		18	IIIAs-ri & IIIAsg-gí°
	wîn-	14	II-ri & IIsg
		18	II-ri & IIsg-gí°
	wôn-	14	III?-ri & IIsg
		18	III?-ri & IIsg-gí°

## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (chart 12)	Referent(s)
8	mân-	14	I!sg-ri & IIIAsg
		17	I!sg-ri & IIIAsg
		18	I!sg-ri & IIIAsg-gî°
		19	I!sg-ri & IIIAsg-gî°
	dîn <sub>2</sub> -	14	(II!/IIIA!)-ri & I!
		17	II!-ri & I!
		18	(II!/IIIA!)-ri & I!-gî°
		19	II!-ri & I!-gî°
9	dó-	13a	Isg-ri & IIIsgA
		13b	Isg & IIIĀsg/pl
	nâ:-	13a	I!sg-ri & IIIsgA
		13b	I!sg & IIIĀsg/pl
10	ʔó:-	12	(III!-ri & IIIAsg), (IIIĀ!-ri & IIIĀsg/pl)
	wí-	12	I!-ri & I!sg
	wó:-	12	III!-ri & I!sg
11	dí-	12	(II!/III!)-ri & I!
		15	II!-ri & I!
12	dovâen-	13a	Isg-ri & IIIAdu
		13b	Isg & IIIĀdu
		14	Isg-ri & IIIAdu
		18	Isg-ri & IIIAdu-gî°

## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (chart 12)	Referent(s)
13	?ovaên-	13a	([IIsg/III?] -ri & IIIAdu), (IIIA-ri & IIIAdu
		13b	IIsg/IIIA? & IIIAdu
		14	(IIsg/IIIA?)-ri & IIIAdu
		16a	IIsg-ri & IIIAdu
		16b	IIsg & IIIAdu
		17	IIsg-ri & IIIAdu
		18	(IIsg/IIIA?)-ri & IIIAdu -gî°
		19	IIsg-ri & IIIAdu-gî°
		14	dovê:-
14	Isg-ri & IIIApl		
18	Isg-ri & IIIApl-gî°		
waên-	12		I?-ri & IIdu
	14		I?-ri & IIdu
	18		I?-ri & IIdu-gî°
wê:	12		I?-ri & IIpl
	14		I?-ri & IIpl
	18		I?-ri & IIpl-gî°
wovaên-	12		III?-ri & IIdu
	14		IIIA?-ri & IIdu
	18		IIIA?-ri & IIdu-gî°
wovê:-	12		III?-ri & IIpl
	14		IIIA?-ri & IIpl
	18		IIIA?-ri & IIpl-gî°

## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (chart 12)	Referent(s)
15	ʔovê:-	12	(IIsg/III!) -ri & IIIApl
		14	(IIsg/III A!) -ri & IIIApl
		15	IIsg-ri & IIIApl
		17	IIsg-ri & IIIApl
		18	(IIsg/III A!) -ri & IIIApl-gî°
		19	IIsg-ri & IIIApl-gî°
16	ʔaen-	6	Idu & Idu-gî°
		9a	Idu-ri & Idu-ví IIIA!
		9b	Idu & Idu-ví IIIĀ!
		13a	Idu-ri & IIIA!
		13b	Idu & IIIĀ!
		14	Idu-ri & IIIA!
		18	Idu-ri & IIIA!-gî°
		ʔê:-	6
	9a		Ipl-ri & Ipl-ví IIIA!
	9b		Ipl & Ipl-ví IIIĀ!
	13a		Ipl-ri & IIIA!
	13b		Ipl & IIIĀ!
	14		Ipl-ri & IIIA!
	18		Ipl-ri & IIIA!-gî°
	daen-	6	(IIdu & IIdu-gî°), (IIIAdu & IIIAdu-gî°)
9a		(IIdu-ri & IIdu-ví IIIA!), (IIIAdu-ri & IIIAdu-ví IIIA°.)	

## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (chart 12)	Referent(s)	
16 cont.		9b	(IIAdu & IIAdu-ví IIIĀ!), (IIIAdu & IIIAdu-ví IIIĀ!)	
		13a	(IIdu/IIIAdu)-rī & IIIĀ!	
		13b	IIdu/IIIAdu & IIIĀ!	
		14	IIdu-rī & IIIĀ!	
		18	(IIdu/IIIAdu)-rī & IIIĀ!-gî°	
	bîr-	6	IIpl & IIpl-gî°	
		9a	IIpl-rī & IIpl-ví IIIĀ!	
		9b	IIpl & IIpl-ví IIIĀ!	
		13a	IIpl-rī & IIIĀ!	
		13b	IIpl & IIIĀ!	
		14	IIpl-rī & IIIĀ!	
		18	IIpl-rī & IIIĀ!-gî°	
	17	?i2-	6	IIIAsg & IIIAsg-gî°
			7	IIIAsg & IIIAsg-ví III!
11			IIIAsg & III!	
18	dê:-	6	IIIapl & IIIapl-gî°	
		9a	IIIapl-rī & IIIapl-ví IIIĀ!	
		9b	IIIapl & IIIapl-ví IIIĀ!	
		13a	IIIapl-rī & IIIĀ!	
		13b	IIIapl & IIIĀ!	
		18	IIIapl-rī & IIIĀ!-gî°	

## Chart 13.--Continued

Verb Set # (chart 6)	Prefix	Frame # (chart 12)	Referent(s)
19	ná-	16a	IIsg-ri & IIIAsg
		16b	IIsg & IIIĀsg/pl
20	bin-	8	(IIdu & IIdu-gi <sup>o</sup> ), (IIpl & IIpl-gi <sup>o</sup> )
		10a	(IIdu-ri & IIdu-ví IIIA <sup>?</sup> ), (IIpl-ri & IIpl-ví IIIA <sup>?</sup> )
		10b	(IIdu & IIdu-ví IIIĀ <sup>?</sup> ), (IIpl & IIpl-ví IIIĀ <sup>?</sup> )
		16a	(IIdu/pl)-ri & IIIA <sup>?</sup>
		16b	IIdu/pl & IIIĀ <sup>?</sup>
		17	(IIdu/pl)-ri & IIIA <sup>?</sup>
		19	(IIdu/pl)-ri & IIIA <sup>?</sup> -gi <sup>o</sup>

they fail in these respects: (1) many zero and homophonous morphs would result; (2) all forms cannot be segmented by analogy with others, so that for some forms segmentation is either not possible or is ad hoc; (3) assignment of meanings to the various parts of even those that show some possibility of segmentation becomes a tortured task in the light of the complexities of the referents involved (sec. 4.3.2).

The typologically similar prefix systems of Taos and Kiowa have been analyzed as segmentable (G.L. Trager: "Taos IV"; E.C. Trager: "The Kiowa Language"; Merrifield: "The Kiowa Verb Prefix"). The Taos analysis posits a series of three slots for most prefixes, four for a few; there are a few homophonous forms, and some zeroes are needed. Merrifield analyzes Kiowa by reducing each prefix to a series of five tagmemes,<sup>82</sup> but, despite a rather complex methodology, he has to admit ("Kiowa Verb Prefix," 172, fn. 17) that there are some forms which do not yield to his analysis; and there are many instances of homophony. E.C. Trager reduces the entire number of prefixes to three slots; but there are a few prefixes that are not provided for by her formulas.<sup>83</sup>

In his analysis of Hopi-Tewa prefixes, Yegerlehner makes no attempt at an overall analytical scheme. He limits himself, first of all, to certain of the total number of prefixes, not including the imperatives. Then a seemingly perfunctory attempt is made at segmentation, prefaced by the statement, "Segmentation of these forms offers many

alternatives, and the one adopted here could be replaced by others" ("Arizona Tewa Person Markers," 76). Multiple reference, seen above in sec. 4.3.1 for many forms, is dealt with simply as a problem in segmentation. Thus the Hopi-Tewa form *dobéé* (cf. *dovê:*, prefix set 14, above) is segmented as *d-o-béé* when cross-referenced to the Hopi-Tewa analog of *na:ri ?i'*, but as *d-o-béé-Ø* when cross-referenced to the analog of *na:ri ?igî'*. If but one such form were involved, such a procedure might be reasonable,<sup>84</sup> but the fact is that several prefixes are treated in this way. Finally he contradicts his own definition of cross-reference (fn. 73), presumably on the basis of metalinguistic elicitation values, when he says, "Certain members of ac X [a subset of the totality of prefixes] are in cross-reference with three sets of N [noun word]. For every three-N ac X, one of the N sets consists of words conforming to the following pattern: N-sg/sg-bíí-nedi, where -bíí-nedi is a morpheme sequence meaning approximately on . . . 's behalf. Such N words mark indirect goal; for a given X, the members of the other N sets with which it is in cross-reference mark actor and direct goal" (Arizona Tewa Person Markers," 78); for he further states, "the direct goal is always 3d in person; its number is never marked by the members of sets (7) - (9) [those involved in the three-N sets]" ("Arizona Tewa Person Markers," 79). If there can be no variation in the prefix form which reflects variation in the direct goal, then by Yegerlehner's definition, direct goal



is not in cross-reference to any part of the prefix. There are, syntactically, simply no three-referent prefixes. The fact that three nouns can be expressed in a clause in some cases (the Nx in chart 12) is no more relevant at this point than that two can be expressed in some cases involving stative verb prefixes,<sup>85</sup> where only one syntactic cross-referent is involved.

4.4. Conclusions. It is clear then, that any translation of Tewa utterances involving a 3rd person referent must utilize information at various levels of analysis--morphemic, syntactic, and semological, when the full gamut of forms dealt with above is overtly expressed; and possibly metalinguistics, if some are not. What keys to the rest of the culture this analysis will provide remain to be discovered through further study.

## FOOTNOTES

<sup>1</sup>The theoretical outlines discussed below are dealt with in those publications listed in the Bibliography under the names of Trager, and Trager and Smith.

<sup>2</sup>Pojoaque, though officially a pueblo, has but a handful of families living in it now. Not all of these speak Tewa, and even those who do are from SC and SJ.

<sup>3</sup>As described by Yegerlehner (sec. 1.2) and as investigated by myself in brief informal field work.

<sup>4</sup>G. L. Trager, "The Tanoan Settlement of the Rio Grande Area: a Possible Chronology" (to be published in Studies in Southwestern Ethnolinguistics, ed. by D. H. Hymes; Harry Hoijer congratulatory volume), makes conjectures about the separation of the several branches of Tanoan from each other, and of Tanoan from Kiowa. Davis also presents an "Aztec-Tanoan Family Tree" ("Linguistic Clues to Northern Rio Grande Prehistory," 30) based on the rather dubious results of glottochronology. The conclusions of both these studies (minus the dating) are, for the relationships as such, essentially the same as those presented here in Chart 1.

<sup>5</sup>Besides Tano, the recently extinct languages of the pueblos near El Paso and of the Piro (all most likely Tiwan),

and of Pecos (reputedly Towa), are also excluded from the chart because of lack of data.

<sup>6</sup>Newman characterized the study as "sound, but not entirely conclusive" ("American Indian Linguistics," 632), but the results have been generally accepted.

<sup>7</sup>H&D give as an explanation for this the fact that neighboring SJ consistently uses /y/ ("Phonemes of Tewa," 142). No doubt recent increase in mobility and pueblo intermarriage has contributed to dialect mixture, though each pueblo is rather proud of its own distinctiveness and jokes about the way that other pueblos speak.

<sup>8</sup>For meaning of these prefixes see Chapter IV.

<sup>9</sup>This omission presumably stems from two reasons: (1) He interprets the nasality of vowels in syllables containing a nasal consonant as phonemic nasalization (see sec. 2.5). (2) Occurrences of /ae/ in completely oral contexts are quite rare. I have but three such occurrences in my data: ʔidâe: 'he tasted it'; ču:gâe: 'chicken hawk'; puvâe 'worm'.

<sup>10</sup>Their symbol is ξ. In quotations and examples from both H&D and H, I have changed their symbols to mine for easier comparison unless the symbol itself is the point of discussion.

<sup>11</sup>Other differences between their phonemicization and mine in some of these examples will be dealt with in later sections, e.g. tone, nasalization, etc.

<sup>12</sup>It may even be the case that for a few speakers

there is a contrast between [y] and [g].

<sup>13</sup>Though for some speakers this word is tɪʔú:

<sup>14</sup>This is possibly what he means by his  $\eta$  ("Ethnogeography," 40), though it is difficult to tell whether he intends it as a phoneme or an allophone since he does not list it under his "sounds" but does include it in his "Alphabetic Order."

<sup>15</sup>As the following discussion points out, these are two problems dealing with different sets of phenomena, but in actuality they may be essentially one in their solution.

<sup>16</sup>Complete absence of offglide would ordinarily occur only before one of the consonants other than those already mentioned.

<sup>17</sup>That sen 'male' and sen 'horn' are not identical morphemes can be demonstrated by their grammatical agreement with other forms in a longer stretch of speech: báyéki sen 'lots of horns', but báyéki sennae' 'lots of men'. Further detail on noun number and class is found in Chapter IV.

<sup>18</sup>Details of problems involving glottal stop in other positions are treated in sec. 2.4.

<sup>19</sup>However, as mentioned in the description of "Verb Structure" in sec. 1.2, there is some reason to suspect several typographical errors as well as errors of other sorts. As one example, that which is already noted as -mægeh ~ -mægeh is also written -megh in ʔó:-megh 'he was given' (122).

<sup>20</sup>N = /n/ or /m/

<sup>21</sup>As mentioned in the summary paragraph on Yegerlehn-er's phonemic methodology (sec. 1.2), it is difficult to know from his article what the actual phonemes of Hopi-Tewa are.

<sup>22</sup>They say "usually," but all their examples involve utterance-final syllables.

<sup>23</sup>Nor do they indicate the amount of variation in these final syllables in respect to stress.

<sup>24</sup>CV? syllables, as dialectal variants of CV°, are not illustrated, nor are CVh syllables, which do not exist in isolation.

<sup>25</sup>S = any syllable.

<sup>26</sup>Or, often, a slight step-up on the second syllable.

<sup>27</sup>Five syllable types (not counting CV?N syllables or contrast between CV? and CV°), two tones, and two syllables yield 100 combinations. Adding glide tone yields another 60. As might be expected with all of the variables involved, not all combinations have been found in two-syllable words.

<sup>28</sup>If there are only two phonemic degrees of stress, the contrast may be stated as a strong contrasting with a weak, or simply as a stress contrastive in its placement. If there proves to be more than two, then there must be as many stress phonemes as there are contrastive degrees of stress.

<sup>29</sup>The difference between root and base in verbs is

discussed in sec. 3.3.4. It is of no relevance to the matter presently under discussion.

<sup>30</sup>púwéré < pú: 'buttocks' and wéré 'support'  
x<sup>w</sup>áfóri < x<sup>w</sup>á 'house wall' and fóri 'door'

<sup>31</sup>Technically, of course, morphs.

<sup>32</sup>For some speakers there seems to be free variation between -f and -?í. For others the particular use of the mode (sec. 3.4.224) determines the choice.

<sup>33</sup>The homophonous forms can be proved distinct by their distribution.

<sup>34</sup>The -an suffix is used only when the question word (what? why? etc.) is not used in isolation.

<sup>35</sup>In some cases I would phonemicize part of the example differently; but as long as the sequence in question is satisfactory, I have not indicated necessity for a change of example.

<sup>36</sup>Numbers 2 and 7 are biradical, and therefore not simple words.

<sup>37</sup>See fn. 8.

<sup>38</sup>The results for both /?/ and /h/, of course, will be relevant to the analysis of consonant clusters in Tewa, since these occur only at syllable borders.

<sup>39</sup>Though in a few cases (e.g. a/-<sup>e</sup> in sec. 3.3.161) there are suprasegmental allomorphs.

<sup>40</sup>Except under the special semological conditions of hypostasis, in which the form qua form is being spoken about. Thus, the question marker √ti- could be affixed

to any phoneme or sequence of phonemes, regardless of status--or could even occur with non-linguistic or paralinguistic sounds, for that matter--in a context such as *ti . . . gin ?ɣtú* 'did you say . . .?'; e.g., *tiḥə: gin ?ɣtú* 'did you say "yes"?'

<sup>41</sup>*cəwə* belongs to a group of roots, mostly color terms, which are ordinarily bound, but which are considered free because they occur as such in names. A person named *p'o: cəwə* 'blue water' may be referred to simply as "cəwə."

<sup>42</sup>Or with verb bases (sec. 3.3.4) which, in many instances, would also be roots. This combinatory possibility applies also in sec. 3.2.112.

<sup>43</sup>By a different division of forms, word superfix could be included here.

<sup>44</sup>"Attached" in this case does not preclude the possibility of another affix intervening between the base and the affix in question.

<sup>45</sup>It is possible that, when a fuller study of Syntax is undertaken, stress patterns per se may show complete separation of affixes from roots; if so, then a few cases of (3) will be re-analyzed as (1).

<sup>46</sup>In addition to the examples given, the morphemes  $\sqrt{-á}$  emphasizer,  $\sqrt{-á}$  series marker, and  $\sqrt{-ân}$  emphasizer sometimes acquire a /y/ following /i/, or a /w/ following /u/, for some speakers; e.g., *?iá* or *?iyá* 'he, indeed'; *?yá* or *?ywá* 'you, indeed'.

<sup>47</sup>Symbolizes "zero".

<sup>48</sup>Homophonous with, but distinct from, the preceding form (see discussion in sec. 3.3.15).

<sup>49</sup>Optional, that is, from a purely phonological or morphemic point of view. Stylistics may well be the determining factor.

<sup>50</sup>See sec. 4.3.2 for meanings of prefixes.

<sup>51</sup>Actually, not all of the complexity is shown here, inasmuch as a few dialectal variants for this morpheme, coupled with combinations involving  $\sqrt{-n}$  set marker, could possibly lead to a slight change in the total inventory of allomorphs involved. The examples given here are for one dialect only.

<sup>52</sup>Since the only instance of this allomorph is in the example given, /n/ instead of  $\sqrt{N}/$  is written--though it would be fully expected that  $\mathcal{A}/\text{?am}$  could also occur.

<sup>53</sup>The examples for allomorphs other than  $\mathcal{A}/\text{maN}/$  are of verbal forms. Two similar examples for 'foot' will be found in sec. 3.3.223. In all of these, plus many more that have to do with metalinguistic situations involving the hands and feet (e.g. pinch, scratch, hold, etc.), the types of allomorphs illustrated for 'hand' and 'foot' appear--but, as far as can be determined, they do not appear elsewhere. Further in practically all cases, the other part of the verbal form is never found without the 'foot/hand' portion attached ( $\sqrt{/tuye}$  in sec. 3.3.223 is one exception;  $\text{max}^{\text{W}}\text{?ae}$ : 'scratch, play a guitar', and  $\text{ma?p}^{\text{?}}\text{?eri}$



'let loose' [ $\sqrt{x^wae}$ : 'plow' and  $\sqrt{p^?geri}$  'take off']) are two others. The examples, then, may be considered to exist in 'frozen' forms, and are consequently non-productive. A point of analytical procedure is also at stake here. It is this: that, contrary to assumptions held by some linguists, metalinguistic criteria are necessary, not merely as a heuristic device, but for the actual identification of some forms of a language. Some forms lend themselves to a synthetic cross-check after an initial analytical identification--e.g., English noun plurals, which can be checked by comparing forms in the frames "one . . ." and "two . . ." (except that even here one must presumably have separated out, on other bases, a form like "o'clock"). In the case at hand, since the forms involved are in fact non-productive--both the allomorphs of  $\sqrt{man}$  and, for the most part, the forms to which they are attached--one cannot establish this type of cross-check.

<sup>54</sup>In some instances a particular allomorph exists in just one combination. E.g., the total distribution of the allomorphs of  $\sqrt{mae^?mae}$ : 'uncle' in sec. 3.3.223 is:

$\sqrt{mae^:mae}$  with  $\sqrt{?e}$ : 'child' (or diminutivizer)

( $mae^:mae^?e$ : 'nephew').

$\sqrt{mae^?mae}$ : in all other contexts.

In such a case it might be argued that the allomorphs are phonologically conditioned, since they are in non-contrastive distribution in respect to  $/?e:/$ . The view taken here, however, is that phonological predictability should

be posited only in those cases that either involve phonological reasonableness (e.g., assimilation to point or manner of articulation); or, in spite of the lack of such reasonableness, show a definite patterning. In the example just cited, there seems to be no purely phonological reason for the change, and the evidence is too scant to establish a pattern.

<sup>55</sup>The illustration given is of a minimum difference. One might as easily find set C wherein a:b=s, and c:a=t, resulting in a maximum difference between set C and either set A or B.

<sup>56</sup>Informants vary on the existence of some forms, particularly those in the Stative column. At the time of this writing, another form, a habitual past, has just been discovered for a few verbs. Though this will probably yield another principal part, preliminary evidence indicates that its inclusion here would not alter the total analysis, except to add complexity to it.

<sup>57</sup>The SC differences for the potential form (sec. 2.1.23) are not included in this chart, nor are other occasional pueblo differences.

<sup>58</sup>In 10, sógéndé° is used with some prefixes, sogehon with others.

<sup>59</sup>The potential and combining forms of čá happen to also function semologically as the corresponding forms for ?áen of set 10.

<sup>60</sup>Dozier is describing the composition of not only

minimum verb words without further affixes, but also what might be called phrase verbs--pronominal prefix, verb base, and a heterogeneous group of morphemes that can occur between them. What we are here calling "verb base" is his "final verb stem," the form that is left when all the intervening morphemes are stripped away. These latter are not dealt with here, since their study would take us into Syntax. Actually, Dozier's illustrations are simply a listing of varying types and numbers of inclusions, with no attempt at analysis of what the inclusions are or of the order in which they occur.

H also mentions one of the simplest forms of verbs with included morphemes: "Appositional nouns can be placed outside of this pronoun-verb cluster or can be tucked in between prefixed pronoun and verb" ("A Brief Description," 501).

<sup>61</sup>At Syntax level a different definition would obtain, since more than one root would be involved.

<sup>62</sup>A third question may also be asked: In the totality of affixes that may at any time occur with a given word, are there mutual exclusions in the occurrence of any? This, of course, is not answered here, since we are dealing with actual forms.

<sup>63</sup>It is to be assumed in all cases that the presence of a root is obligatory to the presence of any affix.

<sup>64</sup>"Action" is used here simply as a shorthand for "the metalinguistic content of a verb base."

<sup>65</sup>?ê:múni could, according to context, also convey a simple future meaning 'we will look at it'; but the hortative force is imparted by -ya hortative particle.

<sup>66</sup>Yegerlehner uses these terms ("Arizona Tewa II: Person Markers," 76) to distinguish his verb classes, which presumably correspond to our two main classes here. These terms are, perhaps, as suitable as any, provided that they are not forced-motion verbs, e.g., being "stative" rather than "active."

<sup>67</sup>Actually, the S.1--S.2 distinction is based on a very few forms. Besides -/?óre the only other verb in my data that does not participate in class S.1 is -/?ânša: 'remember'.

<sup>68</sup>Yegerlehner implies that there are several such cases in Hopi-Tewa ("Arizona Tewa Person Markers," 76), but gives no examples.

<sup>69</sup>There is, in addition to the forms on the chart, a form ví?weri, which occurs with both nouns and verbs to indicate comparison. With verbs it is found only with the potential.

šankí nasogeda' nawínúíví?weri 'he would rather sit than stand' (šankí 'more'; nada' 'he wants'; v.s. 10, 16)

šankínak<sup>w</sup>inuda' nasógéíví?weri 'he would rather sit than stand'

ví?weri is possibly a combination of -ví possessive, plus ?iweri 'from there' (-/?i' 3rd person; -we locative;

√-ri source/agent). If so, the forms in question (nawínúíví?weri, etc.) would then be biradical, but would involve another affix, √-ví, on the potential form of the verb. But the morphophonemic results would not be the same as those described in sec. 3.3.221 for √-ví plus √?í°.

<sup>70</sup>Note the wider uses of this form in sec. 3.4.226. Since the morphemic status of xé:má: and gít?ó: has not yet been fully determined, they will not be used as criteria here.

<sup>71</sup>In conjunction with this last example, compare namae:pírí rómú° 'I saw him though he didn't go'. Though the meaning for √-bo is given as "emphasizer", a comparison of the two utterances shows that a temporal meaning is introduced with the combination verb plus -píríbo.

<sup>72</sup>The actual conditions involved are rather complex, involving such factors as person and/or syntactic class of noun referents, and metalinguistic referent of verb base.

<sup>73</sup>"Cross-reference" will be technically defined, borrowing from Yegerlehner: "Given: x co-occurs with m; if for x there is a y such that the substitution of y for x, all other things being equal, necessitates the substitution of n for m, then x and m are said to be in cross-reference" ("Arizona Tewa Person Markers," 75, fn. 3).

<sup>74</sup>One flaw in her analysis is that the pronominal verb prefix √dé- is said ("The Kiowa Language," 99) to show concord with nouns suffixed to √-gə. (See also pp. 70-72). There are, however, some exceptions which she does not han-

dle, namely some nouns not suffixed by  $-\text{/}-\text{g}$  which nevertheless show concord with  $\sqrt{\text{de-}}$ , e.g.  $\text{t}^{\text{?}}\text{ap}$  'deer',  $\text{k}^{\text{?}}\text{obot}$  'boat'.

<sup>75</sup>The term "animate" is used to indicate the fact that practically all of the items in this class are metalinguistically zoological,  $A_1$  being animals,  $A_2$  people. Exceptions to this are (1)  $\text{te}$  'wagon' and  $\text{?ag}^{\text{?}}\text{oy}^{\text{?}}$  'star', which would be expected to occur as I-dis or I-ag, but which fall into  $A_1$ , and (2)  $\text{t}^{\text{?}}\text{owa}$  'person, people', and words with suffixed  $\sqrt{-n_2}$  'inhabitant of' which are likewise  $A_1$ , since none of these occur with  $\sqrt{-n}$  set marker.

<sup>76</sup>This term is used rather than "cross-referenced to," since the latter term is used elsewhere (fn. 73) in a more technical sense.

<sup>77</sup>The three categories of morphemes outlined above should be referred to--those that cannot signal number, set marker  $\sqrt{-n}$  which can only allow for the possibility of duality, and morphemes that either partially signal number (i.e. non-singularity, non-duality, non-plurality) or completely do so (i.e. singularity, duality, plurality).

<sup>78</sup>They are, however, included in the chart because of certain limitations in respect to the presence or absence of  $\sqrt{-ri}$  source/agent.

<sup>79</sup>"obligatorily" is used here in a relative sense inasmuch as the N to which it is attached is itself always optional within a clause.

<sup>80</sup>The term "referent" in this context means metalinguistic referent. In case the actual forms are different

(e.g., as when one N is a pronoun and the other a noun), a formal test can be given to determine their sameness, namely the substitution of wí?bo 'self' for the second N. When the actual forms are the same (as when two third person pronouns are involved), formal differences are already present: ?iri ?igí° ?ômpa: 'he made it for him (someone else)'; but ?i ?igí° ?ipa: 'he made it for himself'.

<sup>81</sup>In some instances the reflexive or reciprocal concept may not be too apparent, as in dé:bowa 'I finished'--not \*'I finished myself', though perhaps 'I myself am finished', since dóbowa means 'I finished something', with an object specified.

<sup>82</sup>In the sense that K. L. Pike has developed the term, i.e. a structural slot plus a class of fillers for that slot.

<sup>83</sup>The prefix (or two prefixes) ending in /m/ and the dozen or so prefixes of CVCV shape are outside of her analysis as stated. Some forms that do result from the overall formula do not exhibit the expected meanings.

<sup>84</sup>In the analysis presented here, there are two pairs of homophonous prefixes, ?i (p.s. 3)--?i<sub>2</sub> (p.s. 17), and dín (p.s. 2)--dín<sub>2</sub> (p.s. 8). The first two are considered different because, while both may occur with most of the same verb bases, ?i<sub>2</sub> fits frames involving two cross-referents, whereas ?i completes a whole series which has but one referent, and no other member of this series occurs elsewhere with more than one referent. The case for dín vs.

dîn<sub>2</sub> is even more clear, since the former occurs only with stative verb bases, the latter with active.

<sup>85</sup>E.g. na: wêm fé ?oda' 'I want a stick', where the cross reference is only between na: 'I' and -√?o-; or na: wêm fé rînté: 'I need a stick', where the cross-reference is only between na: and -√dîn-.



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