

A GRAMMAR OF ALAMBLAK
(PAPUA NEW GUINEA)

by

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Except where otherwise acknowledged in the text, this dissertation represents the original research of the author.

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Abstract

A GRAMMAR OF ALAMBLAK (Papua New Guinea)

This dissertation is primarily a presentation of a grammar of Alamblak, a language of the Sepik River area of Papua New Guinea. The grammar includes phonological and morpho-syntactic components supplemented with a section relating Alamblak to other Middle Sepik languages.

There are several significant aspects of Alamblak phonology and morpho-syntax which are given prominence in the grammar. These include discussions of 1) abstractness in phonology, reinterpretation and language change; 2) verb root serialization and its association with processes of incorporating non-verbal roots into the verb stem; 3) the non-discreteness of grammatical levels; 4) the interplay of role and referential structures in the clause; 5) semantico-syntactic features of transitivity; 6) an analysis of the notion of 'subject' in Alamblak; and 7) the notion of subordination between clauses and the general correlation of the differentiation of Communicative Dynamism between clauses with the syntactic dependency of one clause upon another. Most of these aspects exhibit a common thesis, that morpho-syntactic form and semantics or pragmatic function are interdependent.

Chapter I provides a general introduction to the study in which the general theoretical framework and important theoretical notions are briefly discussed. Included there is a resumé of the general features of Alamblak, most of which are implied by its basic SOV word order.

The phonology of Alamblak is analysed and described in Chapter II, using a combination of a traditional phonemic approach and a modified Natural Generative approach. The abstractness question is considered there, and some completely abstract underlying forms are allowed for alternating morphemes.

Discussions concerning historical aspects in the phonology are included where they relate to questions of abstractness, reinterpretation, language change, and the interpretation of a high central vocoid which is epenthetic in some of its manifestations and phonemic in others.

Non-verbal word classes are described in Chapter III, and nominal and verbal constructions are discussed in Chapters IV and V, respectively. The notion of grammatical levels is discussed in most detail in Chapter IV, from a Tagmemic viewpoint. There, in the context of the description of the Noun Phrase, the traditional features of stem, word, and phrase levels are applied to the Alambak levels of stem, phrase-base, and phrase. In terms of these traditional definitions, levels in Alambak are described as structurally non-discrete, a feature which is explained in terms of the common functions of constructions at the low levels.

The non-discreteness of levels is mentioned again with regard to verbal constructions in Chapter V. Reduplication, compounds, and derivational-like structures (e.g., causatives, benefactives, and reciprocals) are discussed in conjunction with serialized verb stems which are likened to merged clauses. Serialized constructions, which include incorporated non-verbal roots in the verb stem, constitute the major part of the discussion in Chapter V.

The basic syntactic structures of independent clauses are described in Chapter VI, followed by a discussion of the semantics of the clause and the interrelationship of syntax and semantics in Chapter VII. Included in the discussion of semantics is a semantic characterization of surface case markers, i.e., role encoding markers, and a description of semantic case roles. Semantic case roles are ultimately associated with verb classes as part of their semantic specification.

The discussion of transitivity in the same chapter is the focal point of the interrelationship of syntax and semantics in the clause. In that section twelve verb classes are contrasted along a scale of transitivity; it is there, as a part of the case frame of verb classes, that semantic roles are motivated for Alambak by correlating semantic features of transitivity with their syntactic reflexes which contrast the different verb classes.

Finally in Chapter VII, the notion of 'subject' is analysed in terms of an interplay of role, referentiality, and perspective.

The combinations of clauses in sentence types are described in Chapter VIII. Syntactically, clauses are related in terms of co-ordination and subordination. The logical relations between clauses are described there and a tendency for old or backgrounded new information to be associated with subordinate clauses is noted.

Dependent clauses which are subordinate to an independent clause on the sentence level are distinguished from those which are embedded as a constituent at the same or lower level. These 'embedded' clause types are discussed in Chapter IX, where their syntactic form (including genitive NP's and frequent noun incorporation) and semantic role structure are described. Rules concerning the coreferencing of participants between certain dependent clauses and an independent clause are included in that chapter.

In the final chapter, X, we seek to relate Alamlak, as the easternmost language of the Sepik Hill Stock, to other Middle Sepik languages. In that chapter a preliminary reconstruction of the Proto-Sepik Hill phonological system is attempted. A number of subgrouping hypotheses are also suggested which historically relate the Sepik Hill languages to each other and to other Middle Sepik languages.

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This grammar represents the culmination of a research project but only the beginning of fully explicating the intricacies of the Alamblak language. Acknowledgement is due to many individuals who have contributed in various ways to the completion of this dissertation.

In many ways this study has been only a part of a continuing interest in the Alamblak people and their language. I wish first of all to express my appreciation for the patience and generosity of the many Alamblak people who have taught me and my family much of the Alamblak language as well as broadening our horizons in many other ways. A few of those who deserve special mention include Bunda, Bapioha, the late Makanabi, Ginabmahr, Mengumari, Yahos, and Sindëmbëngr, all of the village of Amongabi.

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For their patient and valuable assistance I thank Professor S.A. Wurm and others in the Department of Linguistics within the Research School of Pacific Studies, A. N. U. The financial assistance provided by the Australian National University has greatly enhanced the progress of the project. Of those who supervised this study programme, I am especially indebted to Dr. D. C. Laycock and Dr. C. L. Voorhoeve who were my principle advisors. Much appreciation is also due to Dr. T. E. Dutton for his comments on Chapters I, VI, VII, VIII, IX, and X, and to Dr. D. T. Tryon for his assistance on Chapters V and X.

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I am grateful to those who first introduced me to the fascinating discipline of linguistics, especially Dr. C. E. Peck, Dr. J. E. Grimes, and Dr. R. E. Longacre of the Summer Institute of Linguistics, as well as to my more recent teachers in linguistics, particularly Dr. W. A. Foley, Professor R. M. W. Dixon, Dr. A. Wierzbicka, and Dr. H. J. Koch of The Australian National University. Their influence will undoubtedly be reflected in any worthwhile results of this research.

The excellent and efficient job of typing of the final draft shared by Christine E. Billerwell, Margaret R. May, and Kathleen L. Bruce is greatly appreciated. The constant encouragement of my wife, Kathy, with her dedicated clerical assistance and constructive observations of language analysis and usage is undoubtedly the single most significant factor contributing to the completion of this grammar. For the patient and active support of her and our two boys, Bobby and Billy, I am most grateful.

Chapter I

INTRODUCTION

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Chapter I

INTRODUCTION

A. GENERAL ORIENTATION

The Alambalak language is spoken by approximately 1200 people living in the East Sepik Province of Papua New Guinea. It is the eastern-most of the Sepik Hill languages.¹

1. DIALECTS AND SOCIAL GROUPS

There are two major Alambalak dialects: the 'Karawari' and the 'Kukenmas' dialects, which exhibit extensive differences in phonology, grammar, and lexicon.² Speakers of the larger Karawari dialect live along the Karawari and Wagupmeri Rivers, and those of the Kuvenmas dialect live along the southern shore of Lake Kuvenmas and eastward (cf. Map II p. 28). There are approximately 800 Karawari and 400 Kuvenmas speakers.

The Alambalak people delineate the boundaries of their language area as coinciding with language boundaries which have been determined on a linguistic basis both in this work and in Dye, Townsend, and Townsend (1968). Alambalak social groupings do not follow language or major dialect groupings, however. Thus there are vernacular terms to distinguish six large social groups, but no terminology which delineates the entire language group or the two major dialects. Alambalak speakers identify varieties of Alambalak speech in terms of the six social groups. In fact, the words used to discuss these folk dialects of Alambalak are derived from the names of the social groups.

¹The name Sepik Hill derives from the fact that most of the Sepik Hill languages are spoken in the foothill region between the Central Range and the flood plain of the Sepik River. The actual area presently inhabited by the Sepik Hill peoples extends from the Karawari River in the east to the Wogamus and Leonard Schultze Rivers in the west, with the southern-most group (of Hewa speakers) located across the Central Range in the Southern Highlands and the Enga Provinces (Cf. Map I, p. 27).

²Although a detailed dialect survey has not yet been conducted, it is clear from observations made on informal visits and from comparisons of texts collected throughout the Alambalak area that these two dialects are clearly defined and that only minor differences exist between communalects within these two major dialects. Both dialects were recognized in Dye, Townsend, and Townsend (1968) and they were first given the above names in Bruce (1975).

The speakers of the Karawari dialect constitute four of the six social groups, Këmbrofm, Marhombm, Yimanifm, and Bnarm. The Këmbrofm ([këmbi'ʔobm]) people live in the villages of Tanganbit (Meingenda), Amongabi, Morwok ([mëʔ'wogʔ]), and in some traditional hamlet sites among the hills between the Karawari River¹ and the Black Water River to the west. The Marhombm ([maʔi'gombim]) people live in the villages of Maramba and Chimbut; their traditional settlements were to the east and west of the Karawari River, respectively. The Yimanifm ([yima'nibm]) people live in the villages of Skayum (Sikaium) and Barabijim (Barapidjin) on the Wagupmeri River² and on Gitfat Creek; their traditional settlements were on the northern side of the Wagupmeri River. The Bnarm ([bi'naʔim]) people live in the villages of Yanitabak (Yenitabak) and Denyik (Danyig); their traditional settlements were north of the Wagupmeri River. The Bahwidëh ([ʔbagwidëg]) people and the "Wolpam" (Haberland 1974:4) people of the Kuvenmas dialect live in the villages of Tarakai, Sevenbuk, Anganamei, and Mariamei.

2. GENERAL FEATURES OF THE ALAMBLAK LANGUAGE

Alamblak is an agglutinating polysynthetic language with some fusional elements. It is predominately suffixing with some prefixing on verbs and no infixes.

The basic word order of the clause is SOV, with some flexibility in ordering. Most general morpho-syntactic tendencies which are typically associated with SOV languages (cf. Greenberg, 1966) are exhibited in Alamblak. Specifically, case relators follow the noun as enclitics, subject and object NP's are unmarked for case, and an interrogative element is not fronted in the clause, but it is ordered in the same way that the grammatical relation it is questioning would be in a declarative sentence

¹The Alamblak equivalent of Karawari is Bohnmayrt ([bogini'maʔʔ]), which Haberland recorded as bogonomari in 1966 (p. 35) and as bogonemali in 1974 (p. 4).

²The Alamblak equivalent of Wagupmeri is Bhopmarir ([bʔgop'maʔʔ]), which Haberland (1974:4) has recorded as bogopmali.

(cf. Chapter VI), and subordinate clauses usually precede the independent clause (cf. Chapter VIII).

There are certain departures in Alamblak from some of the generalizations made by Greenberg for SOV languages. For example, while the ordering of a nominal object before the verb is not strict, the Purpose Clause is not required to follow the main verb (cf. Greenberg, 1966:84) but it occurs as frequently before the main verb as after it (cf. Chapter IX). Secondly, while subjects and objects (both nominal and pronominal) agree with the verb in person, number, and (in third-person singular forms) gender (cf. Chapter V), the adjective does not agree with the head noun for any category (cf. Chapter V) contrary to Greenberg's (1966:93) prediction.

In the noun phrase (cf. Chapter IV) descriptive adjectives may precede or follow the head noun, with the pre-head position being the most common. Possessive phrases and relative clauses normally precede the head noun. Only the final element of the noun phrase hosts inflectional-like categories, so that there is no agreement system operating within the noun phrase.

The Alamblak verb (cf. Chapter V) is potentially a highly complicated polysynthetic unit manifesting various patterns of serialized verb, noun, adjective, and Time Word roots.

The clause is dominated by its semantic role structure although referential structure does play a minor role in the organization of the clause. These notions are discussed both later on in this chapter and in Chapters VI and VII.

3. LINGUISTIC RESEARCH IN ALAMBLAK

Early references to Alamblak include a brief reference to noun classes in the "Karawari-Krosmeri" languages by Haberland (1966), and a short word list of Alamblak in a lexico-statistical study of the Sepik Hill languages in Dye, et. al. (1968).¹ Short discussions of the Sepik Hill languages and of

¹In that study Dye, et. al. relate the Sepik Hill languages at the level of Family. Laycock (1973:75) groups these languages at both a Family and a Stock level. We will return to this question in the final chapter.

the Alamblak and Latoma (Sumariup) counting systems are included in an ethnographic study of the upper Karawari people by E. Haberland and S. Seyfarth (1974:24-30).

The first in-depth study of the Alamblak language was undertaken by the author and his wife, Kathleen, under the auspices of the Summer Institute of Linguistics; that research was conducted intermittently for four years beginning in June, 1970, and several manuscripts (Bruce and Bruce 1971, Bruce 1972), and published articles (Bruce 1974a, 1974b, 1975) have been produced as a result. The paper on "Alamblak verb classes" (Bruce, L. and K. Bruce 1971) is referred to in section II.C of this work. The analyses of verbal constructions and verb classes presented here diverge significantly from that early paper however. The tentative phonemic analysis in Bruce (1972) is also superceded by the statement presented in this study. The published articles include a study of the Alamblak kinship system (Bruce 1974a), an article on syntax, "Alamblak Passivity" (Bruce 1974b), and a study of Alamblak alveopalatal phonemes (Bruce 1975). All of these are referred to in this present work.

Since 1975 the author has intensified his research on the Alamblak language as a research scholar in the Research School of Pacific Studies at The Australian National University.¹

B. GOALS

The goals of the present study are twofold. The primary goal is to present a description of a grammar of Alamblak² supplemented with a discussion of the relationships of Alamblak to other Middle Sepik languages. The secondary goal is to present the grammar in a way which will make it a useful and lasting reference for investigators of Language and languages.

¹During the course of this research several essays have been prepared for courses taken at the above-mentioned university and at the 1978 L.S.A. Linguistic Institute at the University of Illinois. Some of the results of one of these essays appear in Dixon's (1977) semantic study of adjectives, and revisions of all of them have been incorporated into the present work.

²The term 'grammar' is used here in the broad sense, which includes a phonological as well as a syntactic component.

C. THEORETICAL FRAMEWORK

It is the author's conviction that descriptive linguistics is a valid scientific endeavour in its own right; it is a particularly important exercise when the language under study has not previously been studied in depth. Not only is this the case with Alambak, it is also one of only three languages in the stock of twenty-two languages which have ever been studied in depth. In fact, relatively few of the approximately 215 languages in the Sepik area of Papua New Guinea have been studied in a comprehensive way. In these circumstances descriptive work is an essential though preliminary part of linguistic research.

Ultimately the practice of grammatical description should contribute to the development of a general theory of language. Although this study is not primarily an exercise in theory formulation and testing, it is a goal of the study to contribute to that process. In order to best meet that goal, one must consider the present state of work in theoretical linguistics to determine the most useful approach.

It is commonly noted that the field of linguistics currently lacks a generally accepted paradigm within which we can discuss Language. There is no single leading theory which we might test by employing it to write a grammar of a given language. Even if one of the current theories were chosen, none has been adequately developed to provide a framework for writing a comprehensive grammar of sufficient detail, as more than one linguist has observed.¹

Given that no adequate theory exists, Lakoff has pointed out that there is a grave danger in any kind of formal description of a little-studied language in that the limitations of a given theory will obscure certain facts and ignore others with which it cannot cope. He continues,

¹See, for example, Postal (1972:160) and Lakoff quoted in Parret (1974:153).

Moreover, as formal theories become outmoded, as is happening at an ever-increasing rate, descriptions of exotic languages made on the basis of those theories become increasingly less useful. I think the time has come for a return to the tradition of informal descriptions of exotic languages, written whenever possible in clear prose rather than in formal rules, so that such descriptions will still be useful and informative when present theories are long forgotten.
(Parret 1974:153)

What Lakoff has said about formal theories becoming outmoded is likely to be more true now than it was when it was said six or so years ago. There is a plethora of new approaches to language coming onto the scene, e.g., Relational Grammar (Johnson, 1976, and others), Role and Reference Grammar (Van Valin and Foley, 1979), Daughter-dependency (Hudson, 1976), Corepresentational Grammar (Kac, 1977), Trace Theory (Jackendoff, 1975; Fiengo, 1977), etc.

Linguistic science is apparently still at the stage where comprehensive detailed descriptions which are presented as theoretically independent and as informal as possible can contribute much to theoretical developments. In practice, of course, it is virtually impossible to describe a language without recourse to some meta-language and quite impractical to attempt to avoid the use of any formalism.

For those reasons, and in an effort to meet the second goal of this thesis to make the grammar presented herein as useful as possible, 1) formal devices will be used sparingly, to enhance the presentation of significant generalizations in the grammar; 2) we will not be bound to one particular theoretical model; and 3) informal discussions will characterize the grammar throughout.

More specifically, the basic theoretical framework employed in the presentation of the phonological system is Generative Phonology. Concepts of Natural Generative Phonology (NGP) as expressed by Hooper (1975, 1976) have perhaps had the greatest influence. The generative presentation is used in conjunction with a more traditional phonemic analysis following Pike (1947, 1967).

A tagmemic framework is employed in the presentation of the syntax (especially Chapters IV-VI, VIII, and certain parts of Chapter III). The Tagmemic model was chosen because of the author's greater familiarity with it than any other model plus the conviction that as a useful taxonomic device, the Tagmemic model would not obscure the facts of the grammar to any great extent.

The grammar is presented essentially in its own terms, taking a structural approach to ensure that distinctive grammatical features and the inter-relationships of the functions of elements are not obscured. On the other hand, an effort has been made to facilitate the use of this grammar in cross-linguistic comparisons by other linguists, e.g., by cross-referencing between sections of the grammar, by discussing subsystems in one place in the grammar as well as discussing the units in those subsystems in the different parts of the grammar where they actually function, and by correlating certain Alambak facts with current investigations in universal grammar.

The grammar contains comments on certain theoretical questions where the structure of Alambak is particularly relevant. Comments about diachronic processes are included at relevant points, particularly regarding questions in phonology, verb conjugations, and tense markers. Theoretical discussions are only secondary to the primary aims of the grammar, however.

Inasmuch as various theoretical approaches will be employed at various points in the grammar, there may be certain constructs used which are unfamiliar to the reader or they may be used in ways which are different from what the reader is accustomed to. The next section is therefore devoted to introducing and discussing some of these notions.

D. IMPORTANT THEORETICAL NOTIONS EMPLOYED IN THE GRAMMAR

The discussion of important theoretical notions will be presented in two parts--one concerned with those notions deriving from the Tagmemic model and one with those deriving from various other sources. The latter will be treated first.

1. VARIOUS SOURCES

a. UNDERLYING FORMS AND THEIR ABSTRACTNESS

Generative Phonology is used in conjunction with a traditional phonemic approach for the presentation of the phonology, as previously mentioned. This combination provides the basis for underlying forms which are formulated in terms of contrastive phonemes and archiphonemes. The morphophonemic level is dispensed with which indirectly allows the notion of complete phonemic overlap (in alternating morphemes) into the description. The question of how abstract the phonological analysis should be is considered and a highly constrained solution allowing some completely abstract underlying forms is proposed. Further discussion of these theoretical aspects is included in the introduction to Chapter II.

b. VERB SERIALIZATION

In the discussion of verbal constructions (Chapter V), the main topic of theoretical interest is that of serialization within the verb stem. Reference there is made to consolidated and contracted propositions (cf. Frantz 1971: Chapter Four). Those concepts in this work do not indicate that the analysis of Alambak serialization follows a Generative Semantics approach. It is merely a recognition of the parallel that seems to exist between syntactic form and cognition, where tightly knit constructions imply closely associated ideas which are conceptualized as a single state or event at some level of generalization, even though they may be transparently analysable both syntactically and semantically. More importantly, an attempt is made to relate verb (root) serialization and noun incorporation, as well as adjective and Time Word incorporation as cases of essentially the same type of serialized construction. This attempt received inspiration from Frantz's (1971:110-11) discussion as well as Sapir (1911), Lord (1973), and Longacre (1976:150ff). Sapir refers to the constraint that only commonly associated ideas can be serialized, and Longacre discusses the related notion of "expectancy chain". Some such notion seems to apply to all of the serial type constructions in Alambak.

C. SUBJECT, INNER OBJECT, AND OUTER OBJECT

The structure of the clause is examined in Chapter VI and VII. Included in the discussion of the syntax of the clause (Chapter VI) is a description of the three nuclear noun phrase types, viz., Subject, Inner Object, and Outer Object. (Nuclear NP's are either obligatory for a given clause type or are potentially co-referenced by one of two verbal suffixes.) The traditional term 'Subject' is retained but further analysed in those few cases where it does not work (section VII.C.3). The terms 'Direct Object' and 'Indirect Object', however, are dispensed with, and 'Inner Object' and 'Outer Object' are defined in terms of Alambhak syntax with reference to Faltz's (1978:76) discussion of indirect objects in universal syntax (cf. VI.D.).

The lower level morpho-syntactic structures as described in Chapters III-V can generally be described meaningfully in a context-free approach. In a study of clause structure, however, there is a definite tension between a context-free and a context-sensitive approach to the description. The context-free approach, e.g., describing the structure of discourse-initial clauses, is the simplest. Under those conditions, clause types can be distinguished in terms of, among other things, their obligatory constituents. Initially clause types are contrasted in this way in Chapter VI. A full complement of these 'obligatory' noun phrases seldom occurs in a discourse context, however, due to the anaphoric reference function of the verbal pronominal suffixes and other interclausal rules. To account for the more typical clause structure, e.g., discourse-medially, the formal descriptions of clause types allow for a zero (\emptyset) manifestation of NP's which are obligatory for discourse-initial references to other than first- or second-person referents.

d. SEMANTIC ROLE STRUCTURE

The semantics of the clause is discussed in Chapter VII. Semantically clauses are discussed in terms of a predicate (manifested by a verb) and its associated arguments (manifested by nominal constructions). The arguments of a predicate function with certain roles in the predication.

The oblique NP's (relator-related phrases) are syntactically marked for fairly specific role relationships which they bear to the predicate. These roles are categorized as Modal roles and Orientation roles. These categorizations are comparable to Fillmore's (1968) Modality of the proposition or Cook's (1972) Modal cases or Grimes' (1975:119-123) Orientation roles. There is never exact agreement on what to include as roles and how to classify them. Fillmore (1968) includes Instrument with his Propositional roles; Chafe (1970) would relegate Instrument to the Modality of the clause; Cook (1972) includes Instrument, Cause, Purpose, and Accompaniment as Modal cases; Longacre (1976) does not consider Comitative to be a semantic role, but insists that Instrument is diagnostic of a class of verbs (i.e., neither modal nor orientational, but nuclear), and he relegates Cause and Purpose to the sentence level, the realm of combinations of predications. A categorization of roles into Modal and Orientation roles is merely for convenience of discussion and is in no way crucial to the description of the clause.

The roles of the nuclear NP's viz., Actor, Undergoer, and Object, are directly indicated by the clause structure. The limitation of three roles in the clause structure and their terminology was inspired by A. Hale (1974). These are termed participant roles because 'participant' emphasizes the crucial involvement that the referents of these nuclear NP's have in the predicated situation.

The clause structure assigns only a general role to NP's in the clause, oblique NP's being typically more precisely indicated than nuclear NP's. More precise role relationships are a factor of the meanings of the specific nouns and verbs in the clause. The more precise roles will be described for each 'case marking' on oblique NP's and as part of the case frames of a representative set of semantic classes of verbs in Alambak for the roles of the nuclear NP's. The Case-Grammar-type semantic case roles, then, will be discussed in Chapter VII, but only as part of the feature specification of lexical items and not as part of an independent semantic structure of the clause itself.

e. REFERENTIAL STRUCTURE AND THE NP ACCESSIBILITY HIERARCHY

The Noun Phrase Accessibility Hierarchy (AH) is first mentioned in Chapter IV where it is employed as a framework for describing types of relative clauses. The AH as formulated by Keenan and Comrie (1977) ranks noun phrases according to their accessibility to relativization processes, as follows: Subject > Direct Object > Indirect Object > Oblique > Genitive > Object of Comparison. The AH or some form of it has proven to be a useful notion for cross-linguistic discussion of a variety of language phenomena. Keenan and Comrie (1977) formulated the AH in their study of relative clauses. Kuno (1976) searches for a functional explanation for the AH in terms of thematicity and speaker empathy. Comrie (1974) refers to the AH as the "Case Hierarchy" in his study of causatives and universal grammar. More generally, the AH is a crucial component of Relational Grammar (cf. Johnson, 1977, among others).

The Accessibility Hierarchy is discussed again in section VII.C.3, in relation to the notion of Subject. It is concluded there that the notion of Subject is a conflation of the more primitive features of role, referentiality, and perspective.¹ Subjects in Alamblak are defined by two semantico-syntactic features: the subject is Actor (identified by the first pronominal suffix in the verb) and is the left-most of the nuclear NP's. In example 1, yawyt 'dog' is the subject.

1. $\frac{\text{Subj}}{\text{yawy - t}} \quad \text{f\ddot{e}h - r} \quad \text{was - m\ddot{e}} \quad \frac{\text{A}}{\text{- t - r}}$
 dog -3SF pig-3SM pierce-R.PST-3SF-3SM
 'A dog bit a pig.'

¹These notions have been discussed recently in conjunction with the notion of Subject by Schachter (1977), Foley and Van Valin (1977), Olson (1977), Zubin (1976), and others. Van Valin and Foley (1979) have attempted to integrate these notions into a theory of language, termed Role and Reference Grammar, which has been a major source for Chapter VII of this thesis.

That the notion of Subject is a multi-factor notion is not new. Halliday (1970:164), for example, analysed the traditional Subject as a complex of four possible functions.

By the definition of Subject given above, there is a small set of clause types for which a subject NP cannot be identified in a straightforward way. For example, in certain clauses which include inalienably possessed items, the NP whose referent is the possessor occurs strictly in first position. The inalienably possessed NP is co-referenced as the Actor but follows the first NP in the typical object position. The first NP is the referentially prominent NP (RP) and the second is the Actor.

2. RP Actor A
 yima - r ñuNgram - t kina - mē - t - r
 person-3SM throat -3SF dry-R.PST-3SF-3SM
'The man is dry { in / because of } (his) throat.'
 (= *'The man is thirsty.'*)

One of the characteristics of the referentially prominent NP in example 2 is that it may be relativized on, whereas the Actor NP may not be. With that fact, the relevance of this discussion to the Accessibility Hierarchy becomes apparent. One of the primary functions of the Accessibility Hierarchy is to account for distinctions which languages make between NP's with respect to relativization potential or relativizing strategies. The AH as formulated by Keenan and Comrie (1977) however, will not directly account for the NP's in example 2, since there are no RP or Actor positions on the hierarchy. Drawing upon Schachter's (1977) discussion of subject properties, it is suggested in Chapter VII that for explanations of the behaviour of NP's with respect to relativization, Subject should be replaced by Referentially Prominent NP in the top position of the Accessibility Hierarchy.

f. ANIMACY HIERARCHY

In conjunction with the discussion of referentiality, the notion of Animacy Hierarchy is introduced. As conceived by Van Valin and Foley, (1979), the referentiality of a noun phrase is determined in part by discourse-controlled factors such as definiteness and givenness and in part by inherent features of

topicality which can be described by an inherent Topicality Hierarchy (cf. Hawkinson and Hyman, 1975) or an animacy hierarchy such as this: Speaker > Hearer > Human proper > Human common > Animate > Inanimate (Foley 1976).

g. COMMUNICATIVE DYNAMISM, BACKGROUNDING, AND NEW AND OLD INFORMATION

Several theoretical notions are introduced in Chapter VIII to help describe and analyse Alambak sentence structure. Sentences are described both semantically and structurally.

The semantics of sentences include the semantic relationships between clauses as developed by Longacre (1976:98ff) and discourse features of new and old information and backgrounding which are discussed in conjunction with the Prague school notion of Communicative Dynamism (CD) (Firbas 1964).

Structurally sentences relate two or more clauses by co-ordination or subordination. Co-ordinate clauses may be either equally independent or mutually dependent. Subordinate clauses are dependent upon an independent clause for expression. The label 'embedded clause' is used to distinguish dependent clauses which function at the clause level or lower, from subordinate clauses which function on the sentence level (cf. Chapter IX).

2. TAGMEMICS

As already stated, the Tagmemic model is the basic theoretical framework for the general description of the grammar. The basic features of Tagmemics which appear in this grammar include notions of grammatical levels, generalized construction types or constituent units and the function-set correlation.¹ These features will be discussed briefly here.

¹Elaboration of these and other features of Tagmemics may be found in Pike (1967), Pike (to appear), Pike and Pike (1977), and Longacre (1965, 1976). See Waterhouse (1974) for an annotated bibliography.

a. HIERARCHIES AND LEVELS

Briefly, Tagmemics postulates that any language can be described in terms of three hierarchies, viz., a phonological hierarchy, a grammatical hierarchy, and a semantic¹ hierarchy. Layered structures in the semantic hierarchy have been proposed but have not yet been extensively developed.² Levels of structures in phonology have not been analysed for Alambhak. This area has been considered a low-priority area; its absence from the present work is not an implicit claim that inclusive layers of phonological structure do not exist across a segment of speech. The grammatical hierarchy provides the basic organization of Alambhak grammar which describes the typical pattern of smaller units functioning in larger structural units from morpheme classes (Chapter III), to stems to phrase-bases to phrases (Chapters IV and V), to clauses (Chapters VI and IX), to sentences (Chapter VIII). The number of structural levels in the grammatical hierarchy are not specified by the model but must be established language-specifically.

The defining features of the lower levels--stem, phrase-base, and phrase in Alambhak--are discussed at length in section IV.A. In that section features of the traditional levels of stem, word, and phrase are compared to the features of the first three levels postulated for Alambhak grammar. The Alambhak levels of stem, phrase-base, and phrase are shown to be structurally relevant for an economical description; however, traditional defining features of stem, word, and phrase levels do not satisfactorily distinguish the lower levels in Alambhak. Levels of stem, phrase-base, and phrase in Alambhak must be described as a mixture of features taken from each of the traditional levels of stem, word, and phrase.

¹More recently the semantic hierarchy has been termed the 'relational hierarchy' in Pike and Pike (1977:3).

²See Glover (1974) for a formulation of the semantic hierarchy as applied to Gurung (Nepal). See also Pike (to appear) for more recent work on the semantic hierarchy.

The levels themselves do not exhibit discrete borders as shown most clearly in the discussion of numerals three and four (cf. section IV.C.2.c.). These numerals have become--or are becoming--phrase-bases, having been phrases at an earlier stage. The fusion of grammatical levels evident at the lower levels is also evident at the higher levels. The indeterminate border between clause and sentence is seen in the discussion of dependent clauses in Chapter VIII. In the introduction to that Chapter there is a short discussion on the question of grammatical levels above the sentence. Even proposed language-independent definitions clearly exhibit the structural fusion between sentence and a proposed paragraph level.

Units do not always function in constructions at the next higher level. Thus roots may function on the clause level (e.g., negation particles), or clauses may function on the phrase-base level (e.g., relative clauses).¹ In general, syntactic units are discussed at the grammatical level where they function.

b. CONSTRUCTION TYPE AND TAGMEME

Generalized construction types will be described in terms of their internal structure, and their function in other constructions. The description of constructions functioning within constructions of another or the same level reduces redundancy in the description in that units need be described only once and larger constructions can be described in terms of component constructions. Tagmemics has typically emphasized the importance of establishing the contrastive status of syntactic constructs with great care and deliberation. This particular focus of the theory has a historical explanation. Much of the inspiration of Tagmemics came from analogies with contemporary phonological theory. Thus a form-meaning composite analogous to the phoneme was constructed for grammar with the

¹Longacre (1976:262-71) has developed an elaborate theory of exponence to allow for these patterns of distribution.

same requirements of identifiable contrastiveness, variability, and distribution to justify establishing specific grammatical units. The theory generalizes these requirements for the identification of any unit, be it a phoneme, grammatical construction, or a unit of human behaviour. The grammar which follows in this study departs in emphasis at this point from traditional Tagmemics. The meaning and/or function of syntactic constructions is considered to be more important than structural classifiability, thus constructions with different functions are established and described without establishing contrastiveness between constructions according to strict tagmemic requirements in every case.

The function-set, or form-meaning composite in syntax has already been alluded to. It is the name of this unit, the Tagmeme, from which the theory derives its name. The term Tagmeme is not used in this grammar, although the notion itself is. Essentially, a Tagmeme is the specification of a possible constituent of an abstracted construction type. At least two types of structures are relevant to any grammatical constituent: (1) its paradigmatic relationship with other members of a set of elements which may manifest a given function in a construction and (2) its functional relationship, or relationships, to other constituents in the construction. Morpho-syntactic constructions, then, are analysed in terms of the grammatical functions of their constituents and the potential manifesting set of elements (i.e., the exponents) of those functions. A particular segment of speech will be a well-formed construction if it meets the structural description of a construction type, i.e., having permissible exponents manifesting prescribed functions within the construction.

A construction type, then, is essentially a phrase-structure rule, in Transformational Generative grammar terminology, with the functions of the constituents specified. Other information is provided in displays of construction types as well, such as optionality and the basic ordering of constituents. Matters of permutability, repeatability, and co-occurrence restrictions relating to constituents, as well as semantic interpretations in given contexts are discussed informally as required.

An example of a construction type, the minimal kinship stem (from Table 30, p. 127) is given below by way of illustration.

Minimal Kinship Stem

functions	+ Core	+ Classifier
exponents	Kin Term roots yimat ' <i>friend</i> ' tamëh ' <i>what</i> (<i>substantive</i>)'	-em ' <i>kinship marker</i> '

A kinship stem consists of two obligatory constituents, one functioning as Core and the other as Classifier. A particular stem may be constructed by selecting an exponent for each function. Possible exponents of the Core function are Kin Term roots (specified in the lexicon), the root yimat '*friend*' and the Interrogative root tamëh '*what (substantive)*'. One of these roots must be combined with the suffix -em '*kinship marker*' to form a minimal kinship stem. The construction itself does not manifest a function until it is embedded as a constituent of another construction. In the noun phrase base, for example, (cf. Table 38, p. 156) it is listed as an exponent of the Head function.

While the functions of constituents within constructions are given a prominent place in the Tagmemic model, they have not often been explicitly defined. For example, it is not at all clear that the Core function of stem constructions is distinct from the Head function of a phrase or if the difference between stems and phrases lies in the functions of other constituents in the two constructions which relate differently to and have different effects on the Core or Head constituents. Although Tagmemic theory is weak at this point, there are areas of syntax for which the specification of the functions of constituents is necessary and revealing of the structures of the syntax. Where possible this grammar of Alamblak attempts

to explicate those cases where the functions of constituents can be analysed and shown to be significant for the construction. In other cases functions may be little more than suggestive labels for constituent positions in constructions.

c. THE EXPANDED TAGMEME

One of the major developments in Tagmemic theory since its conception has been the expansion of the tagmeme. The Expanded Tagmeme has increased the amount of information that is required to completely specify constituents and their relationships to other constituents. A short-lived nine-box tagmeme (Hale 1974:57) was scaled down to a four-box tagmeme which adds a semantic dimension to the correlation of function and category. An example of Franklin's (1969:18) set of specifications for a clausal constituent is given in Table 1.

Table 1: Four-box Tagmeme (Franklin 1969)

	Grammar	Semantics
Functions	Subject	Actor
Categories	Noun	Common

The semantic functions of nominal clause constituents derive from Pike's (1964) "situational roles" and refinements have benefited from the work of Case Grammar.

Clause-level tagmemes used in the present study are comparable in format to Franklin's four-box tagmeme, with two differences. The first difference is a terminological one; the term "categories" is replaced by "exponents" i.e., the set of units which expound a given function, following Longacre (1976:258ff).

Secondly, the functions which qualify as semantic functions are restricted to generalized semantic roles which are structurally marked in the clause. Franklin's semantic functions of clause-level constituents, on the other hand, are equivalent to covert semantic case roles as developed, for example, in

Case Grammar. As already indicated in this chapter, such specific roles cannot be specified for tagmemes, which are abstract construction points of a construction type (cf. Longacre, 1976:258). Precise semantic roles, such as those employed in Case Grammar, can only be specified after the individual lexical items are selected to form the construction. That is, these roles are ultimately features of semantic specifications of lexical items and not part of an abstract clause type (i.e., construction type). For example, the Specific Setting case marker -n may indicate a time setting or an interior, surface, or adessive location setting. The precise role of an exponent of the Specific Setting function is determinable by the meanings of the lexical items of the clause in conjunction with a role hierarchy; the role is not part of the specification of the NP type. The precise role of the S.Setting NP in each clause in example 3 is indicated by the translations.

3(a). S.Set NP
 nuam watonhitwana dbha - n
 food you.fry.for.me morning-S.SET
 'Fry food for me in the morning.'

(b). S.SET NP
 yimar kuñt - n tēhwër
 man house-S.SET he.is.standing
 'A man is standing { in } a house!'
 *on
 *at

(c). S.SET NP
 yimënë yuraknanë kmiñsëfm - n
 we.went up.on mountains-S.SET
 'We went up { on } the mountains.'
 *in
 *at

- (d). $\overbrace{\text{S.SET NP}}^{\text{S.SET NP}}$
 tēhmēnē buktkor - n
 we.stood headwaters-S.SET
 'We stood $\left\{ \begin{array}{l} \text{at} \\ *in \\ *on \end{array} \right\}$ the headwaters.'

Role structure is still a part of clause structure. Only generalized roles, however, are indicated by the structure of the clause. For nuclear NP's we employ three generalized roles-- Actor, Undergoer, and Object (cf. A. Hale, 1974). The number of roles for peripheral NP's varies greatly according to the particular encoding conventions there are in a given language. Roles encoded by peripheral NP's in Alambak are discussed in Chapter VII.

A full specification of the features of a four-box tagmeme is frequently unenlightening or redundant. Hale (1974:57-8), referring to this fact, suggests that, "the degree to which any given tagmeme shows redundancy among its cells is currently taken as a measure of the peripherality of the tagmeme." More disturbing to the theory is the possibility that there may be no distinction between grammatical and semantic functions for most constituents. Only nuclear NP's seem to be clearly multi-functional elements in the clause. Thus the -n case-marked NP's in example 3 function simply as Specific Setting NP's. It would be artificial to postulate two separate terms for grammatical and semantic functions until such contrasting functions can be clearly motivated.

It is redundant to specify both functions in many cases even for nuclear NP's. In Alambak, for example, using the terminology employed herein, the Subject is predictably the Actor, the Inner Object is predictably the Undergoer, and the Outer Object the Object. The distinction between grammatical and semantic function is maintained here, however, in view of the evidence that the subject function is a complex notion. Subject is predictably Actor only because it is by definition a conflation of referential prominence and Actor role. The notion Subject is only used where there is a conflation of referential prominence and Actor role. When those two properties are separated, the

The Referent NP (cf. Table 95, p. 309) makes no such semantic restriction on the exponents of the head function, e.g.,

- 5.
- | | |
|--------------|----------------|
| | Ref NP |
| nayayrahnëm | yima - r - pnë |
| we.will.come | person-3SM-REF |
- 'We will come to the man.'*

The specification of tagmemes as represented by the four-box tagmeme will be presented in chart form in this grammar, as illustrated on page 18. The grammatical function marked for optionality is followed by the semantic function in parentheses where relevant. Exponents of the function are listed below the functions with any required semantic specifications enclosed in square brackets.

E. MATERIALS

The present study of Alamblak grammar draws from a knowledge of the language which has been acquired since mid-1970. It depends primarily, however, on data from a variety of texts and extensive elicitation, particularly as carried out during 1976 in the village of Amongabi. The analysis was aided by a morpheme concordance (Bruce 1973) which was produced from 100 pages of Alamblak texts by the Linguistic Information Retrieval Project of the Summer Institute of Linguistics and the University of Oklahoma Research Institute. The larger of the two dialects of Alamblak is described in this grammar, particularly as it is spoken by the people of Amongabi village. More specifically, the speech of middle-aged men is described; some differences between their speech and that of the younger men is analysed in Chapter II.

The historical-comparative study of most of the Sepik Hill languages and other Middle Sepik languages (Chapter X) is based on data from a number of sources. Of the sixteen Sepik Hill languages considered in this study, the data for six languages consist of word lists collected by Dye, et. al. (1968). These languages are Kaningara, Kapriman-Karambit, Watakataui, Bisis, Mari, and Bitara. Data from that same survey was also consulted

for Sumariup, Bahinemo, Sanio-Hiowe, Paka (Setiali), and Karawari (Tabriak). A number of word lists collected by members of the Summer Institute of Linguistics and now on file in Ukarumpa, Papua New Guinea, were consulted for Sanio-Hiowe, Yessan-Mayo, and Iatmul. Short lists for Paka, Biami (Piame), and Bikaru were obtained from the Ambunti Patrol report number 4/1970-71, Niksek Census Division. The Hewa lists were obtained by the author and Marshall Lawrence in 1970. Two of the three Hewa lists used in this study were obtained in the hamlets of Pauia and Mongolipa; the third list was obtained from a Hewa man from Kiane in the gaol at Lake Kopiago. Don Laycock kindly made some of his personal word lists available to me for spot checking in other languages of the Tama and Nukuma families. Other references used for wider checking included Lang (1973), and McElhanon and Voorhoeve (1970). Ipili items were checked with Stephen Wurm (personal communication). Lewis and Lewis (1972) was consulted to form an extended list for the Hiowe dialect of Sanio-Hiowe. Other works listed under Lewis, Dye, Staalsen, Kooyers, and Foreman in the bibliography were also frequently consulted. More extensive data were obtained by the author on a field trip in 1976 for Sumariup, Alamblak, Bahinemo, Sanio-Hiowe (Sanio dialect), Yessan-Mayo, Kwoma, Iatmul (Nyawara dialect), and Karawari. During the 1976 field work, three days of elicitation were spent for each language, collecting approximately 550 lexical items and 70 grammatical morphemes.

F. PRESENTATION

This thesis presents a grammar of Alamblak (including a phonological analysis) in Chapters II-IX and then relates Alamblak to other Middle Sepik languages in the final chapter, Chapter X. Samples of the Alamblak language are presented in an orthography which is based on the phonological analysis in Chapter II.

As an aid to the presentation, the abbreviations and other conventions listed below have been used. Abbreviations for semantic and syntactic functions have initial capitals while those for morpho-syntactic categories are entirely in upper case.

1. ABBREVIATIONS

A(ct)	Actor	I.PST	Immediate Past Tense
Ad	Adessive	IRR	Irrealis
AD	Adessive (e.g., marker/NP)		
Ag	Agent	KIN	Kinship
ADJ	Adjective		
ADV	Adverb	LIM	Limiter
Al	Allative	Loc	Locative
AL	Allative	LOC	Locative
Aff	Affective		
		M	Masculine
BEN	Benefactive	Ma	Manner
		M.Ins	Manner Instrument
C	Consonant		
CAUS	Causative	N	Noun
CL	Clause	NAS	Nasal
COM	Comitative	NEG	Negative
CONJ	Conjunction	NOM	Nominalizer
COP	Copula	NP	Noun Phrase
CPL	Completive	N.PST	Near Past Tense
		NUM	Numeral
D	Dual		
DA	Different Actor marker	Out.Mod	Outer Modifier
DECL	Declarative	Out.Obj	Outer Object
DEM	Demonstrative		
Der	Derivation	P	Phonological
D.Ins	Direct Instrument	Pat	Patient
		PERF	Perfective
E1	Elative	PH	Phrase
ELEV	Elevational	PL	Plural
EMP	Emphatic	PNG	Person-number-gender
E/R	Emphatic/Reflexive	P.of R	Point of Reference
EQ	Equative	POSS	Possessive
Exp	Experiencer	POSSD	Possessed
		PR	Present Tense
F	Feminine	Pred	Predicate
For	Force	PROC	Process
		PROG	Progressive
G.SET	General Setting	PRON	Pronoun
G.SUB	General Subordinator	PRSUP	Presupposition
GEN	Genitive	PUR	Purpose
HORT	Hortative	QNP	Question Noun Phrase
		QUANT	Quantifier
IMPER	Imperative		
IMPF	Imperfective	Re	Reason
IMP/HOR	Imperative/Hortative	REAL	Realis
INCHO	Inchoative	REC	Reciprocal
INF	Infinitive	Ref	Referent
In.Ins	Indirect Instrument	REF	Referent
In.Loc	Interior Locative	REL	Relative
In.Mod	Inner Modifier	RESP	Resemblance Phrase
In.Obj	Inner Object	Rg	Range
INS	Instrument	RP	Referentially Prominent
INTERR	Interrogative	R.PST	Remote Past Tense

SV	Semi-vowel	U(nd)	Undergoer
SA	Same Actor marker		
S	Sentence/Syllable/Singular	V	Vocoid
SEQ	Sequence	VB	Verb
S.SET	Specific Setting	VP	Verb Phrase
SIM	Simultaneous		
Subj	Subject		
Sur Loc	Surface Locative	1	First person
		2	Second person
		3	Third person
Temp	Temporal Reference		
Term	Terminator		
TNS	Tense		

2. SYMBOLS

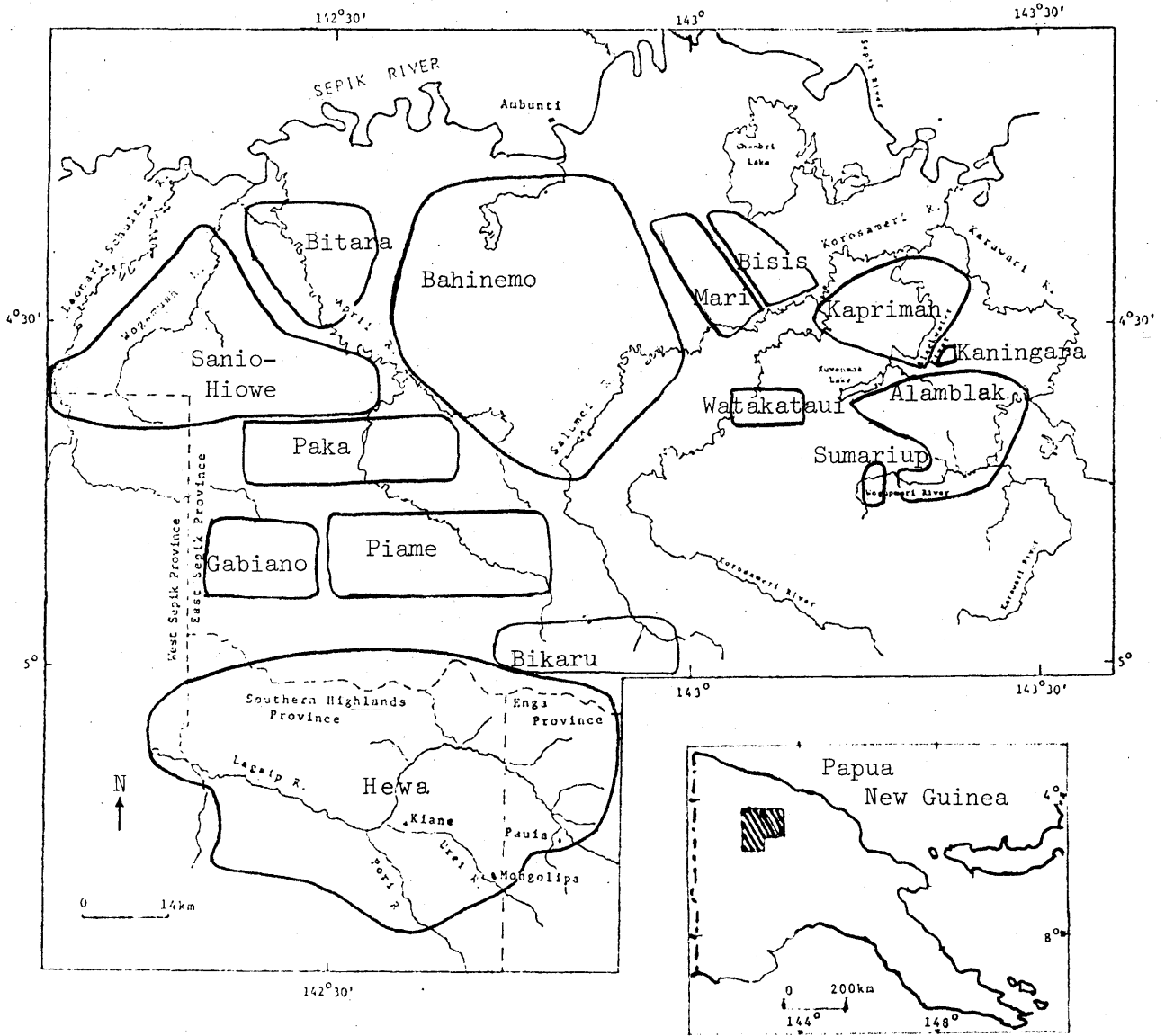
#	Word boundary
##	Pause
(X) ^R	X iterates
:	length on preceding segment
{ x y }	x and y are alternatives
[a b - ±]	[x y z +]
	a co-occurs with x
	b co-occurs with y
	z occurs by itself
	an optional reading of a constituent is followed by an obligatory reading of another constituent
()	parentheses are used to indicate optionality in phonology, or to bracket a gloss which is not morphologically represented, or to bracket a semantic role in an analysis of a constituent.
+	obligatory (in syntax)
-	non-occurring, or morpheme boundary
±	optional (in syntax)
→	is rewritten as
/	in the following environment
.	separates multiple glosses of single morphemes or words.
~	alternating forms
┌	delineates a constituent construction e.g.,

Subj	Pred
yën-r	fnurr

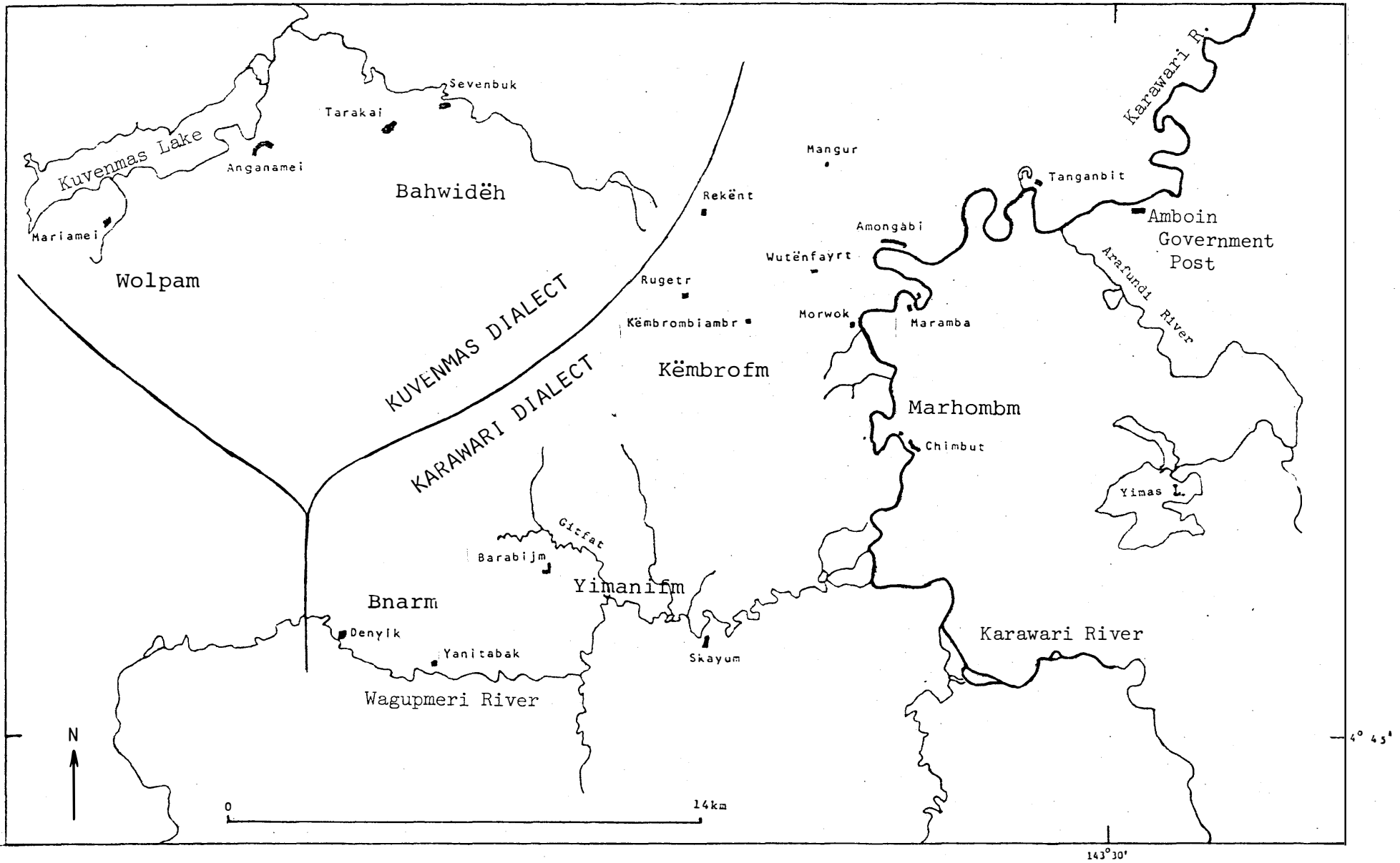
(Constituents are labelled with syntactic categories, syntactic functions, or semantic functions, or any combination of these, depending on the focus of the discussion relating to the example.

*	ungrammatical utterances and reconstructed forms are starred
?	of questionable grammaticality
[]	square brackets are used to enclose phonetic transcriptions, and phonetic or semantic feature specification

Map I: Sepik Hill Languages



Map II: Alamlak Dialects and Social Groups



Chapter II

PHONOLOGY

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Chapter II

PHONOLOGY

A. INTRODUCTION

The following analysis of Alamblak phonology is presented within essentially a generative framework, although it is eclectic at certain points. Among the varieties of generative phonology, the present analysis tends to be more like Natural Generative Phonology (NGP), particularly as presented by Hooper (1975, 1976). Some of the principles of a more traditional phonemic analysis (following Pike 1947, 1967) have been employed to determine the contrastive sets of phonetic features in Alamblak phonology. The methodology of phonemic analysis has been applied initially to non-alternating morphemes and then extended to those alternating forms with phonetic variations which do not result in complete phonemic overlap.

Sommerstein (1977:1-15) compares the classical phonemic approach to phonological analysis with the modern generative approach and finds them complementary. An attempt is made in this chapter to use both approaches in the complementary roles Sommerstein views them as having in phonological description. The phonemic approach defines the underlying contrasts, which are expressed in terms of underlying segments. Then the generative approach specifies the surface manifestations of the underlying segments.

The notion of phoneme will be used throughout as representing segments of surface structure contrasts which are relevant for contrasting underlying forms. The notion of archi-phoneme is employed to represent a neutralized contrast in a specified environment. Underlying forms (i.e., base forms) of non-alternating morphemes transcribed in terms of phonemes and archi-phonemes will be "identical to their surface forms, except that all naturally derivable redundant features [will] have been removed." (Hooper 1975:555).

Specifying the underlying forms of morphemes with alternating forms is somewhat more complicated. In all cases of alternating morphemes a single base form will be postulated, but a distinction will be made between phonologically conditioned and morpho-

syntactically conditioned alternations.

For phonologically conditioned alternates, the base form will "consist of non-redundant representations of segments actually occurring in one or more surface allomorph" (Hooper 1975:555), unless a completely abstract form can be motivated. We depart from Hooper's framework at this point by allowing abstract underlying forms. Abstract forms will be motivated where there is evidence of a conflation of natural phonetic processes which, ideally, are independently motivated in other cases involving derivations from more concrete underlying forms. Abstract forms simply represent those cases of accidental morphological structuring where the underlying form is not allowed to surface. The abstract portion of an underlying form can be identified by comparison with other alternating morphemes which fit into the same paradigm but which manifest the abstract segment of the form in question in one of their surface alternations.

For purely morpho-syntactically motivated alternates, the base form will be that alternate which is least restricted in distribution.

Once the basic contrastive units of the phonological system have been identified and an underlying form has been assigned to each of the morphemes of the language in terms of those contrastive units, then the phonological rules are applied to derive a phonetic form for each morpheme or string of morphemes. Three types of rules will be employed to derive surface forms from base forms. Phonotactic structure rules will provide the basis for the operation of certain phonological rules and will operate after others. Phonological rules describe processes of epenthesis and deletion as well as "fill in blank values of features and change feature values if the combination of morphemes into words produces a string that meets the structural description of a rule" (Hooper 1975:556). The functions of adding or changing phonetic features of underlying phonemes does the job of the traditional allophonic statement in a phonemic description. The same type of natural (i.e., phonetically motivated) phonological rule will derive the surface forms of phonologically conditioned alternates from their underlying form. Rules which will be termed morphemic rules will derive morpho-syntactically conditioned

alternates from their underlying form whether or not phonetic motivation is involved as well. Morphemic rules are similar to classical morphophonemic rules in that phonemic forms of morphemes are specified in the output of the rules. They differ, however, in that the base form (i.e., underlying form) is phonemic as well, rather than being in a distinct morphophonemic representation. These rules which are not, strictly speaking, phonological rules will be included in appropriate sections in the syntax (e.g., verb root allomorphs in section V.B.1.e.)

The approach adopted here is considerably simpler than the classical morphophonemic approach. Generalities are grasped where they are missed or obscured by redundancies in a morphophonemic description. At one point in the description, for example, a single phonological rule can be substituted for a morphophonemic rule plus a redundant phonetic rule (i.e., a classical allophonic statement). This situation is comparable to what Halle (1959) described for Russian. The morphophonemic rules themselves, which would be needed to describe alveolar-alveopalatal alternations in Alambalak, would be very cumbersome compared to the generative approach followed here. See the footnote on page for some discussion of this point.

The implications of handling traditional morphophonemics by phonological rules include the acceptance in principle of complete phonemic overlap, i.e., 'intersection', in Pike's (1967:301-2) terms, or neutralization in NGP, (Hooper 1976:21). While partial overlap (two or more phonemes with the same allophone in different environments) was acceptable in classical phonemics, intersection (two or more phonemes with the same allophone in the same environment) was not. Phonemic intersection in non-alternating morphemes (i.e., morphemes of one phonetic shape) is not permitted in this description; it will be permitted, however, where alternating forms give evidence for it. In principle, partial overlap and complete overlap (intersection) are not distinguished qualitatively. Both situations arise as a result of natural phonetic modification of different segments resulting in a surface ambiguity. Cases of complete overlap must be justified, however, to avoid arbitrary differentiation of phonetically identical forms. Alternating morphemes provide a concrete basis for postulating different

phonemic segments with identical phonetic manifestations when they can be derived by a natural phonological rule (e.g., a rule motivated by Pike's (1947:58) own principle that "Sounds tend to be modified by their environments.").

Postal (1968:section I) has argued convincingly that it is possible for a surface (i.e., phonetic) contrast to represent a different underlying contrast when base forms are fully specified morpho-syntactically. Similarly, phonetically identical forms may derive from contrasting base forms (a case of complete phonemic overlap). Most of his discussion, although not all of it by any means, is restricted to cases of alternating forms (i.e., allomorphs) where phonemic intersection occurs at morpho-syntactic boundaries. Schane (1971:519) points out that such preoccupation with morphophonemics is typical of most generative descriptions.

Recent discussion in phonological theory has emphasized the difference between alternating and non-alternating forms, however. This emphasis has grown out of attempts to define the types of constraints that are necessary to impose on generative phonology to remove arbitrariness in underlying forms. In seeking to formulate needed constraints, Natural Generative Phonology, e.g., Hooper (1976:21), has made a clear distinction between alternating and non-alternating forms. We will include that distinction here with the effect of restricting complete phonemic overlap to cases which can be phonetically motivated by appealing to alternating forms.

For example, given the forms in example 1 below, the [i] vocoid in both forms is non-contrastive and by the classical phonemic method would be assigned as an allophone of the same phoneme.

- 1(a). /fawi-e-t/ ['pawiet] 'It is the mouth of a river.'
 (b). /yawy-e-t/ ['yawiet] 'It is a dog.'

In other forms of the morpheme 'dog' it is evident that it belongs in a paradigm with other roots which manifest a final [y] in at least one of their surface forms, e.g., compare the forms in 2 with those in 3.

- 2(a). /buy-e-t/ ['buyet] 'It is a bamboo water-carrier.'
 (b). /buy-t/ ['buč] 'bamboo water-carrier'
 (c). /buy-m/ ['bum] 'bamboo water-carriers'
- 3(a). /yawy-e-t/ ['yawiet] 'It is a dog.'
 (b). /yawy-t/ ['yawč] 'dog'
 (c). /yawy-m/ ['ya^om] 'dogs'

Fawi 'river outlet' is a non-alternating morpheme and shows a different pattern.

- 4(a). fawi-e-t ['pawiet] 'It is a river outlet.'
 (b). fawi-t ['pawit] 'river outlet'
 (c). fawi-m ['pawim] 'river outlets'

The underlying /y/ in 'dog' has interacted with the person-number-gender marker to produce an alveopalatal [č] (ex. 3(b)) as in 'bamboo water-carrier' (ex. 2(b)). The underlying /i/ in 'river outlet', although manifested in the same form as the /y/ of 'dog' in the (a) forms of examples 3 and 4, does not produce an alveopalatal PNG marker in example 4(b), nor does it delete in 4(c).

This problem is not a minor one for Alambhak phonology. There is a large number of phonetically alternating morphemes to be dealt with. The problem relates directly to the interpretation of the phonemic status of alveopalatal contoids and non-central vocoids. There is considerable evidence for the fusion of y with alveolars to produce alveopalatals, and semi-vowels with central vowels to produce non-central vocoids. There is also evidence that in some environments both alveopalatals and non-central vocoids have been assigned phonemic status (i.e., are contrastive in underlying forms). This is particularly true in non-alternating forms and in alternating forms where reinterpretation is evidenced by an analogical extension of phonemes. The resulting situation, which seems to be at the beginning stages of phonological changes in these areas, involves considerable phonemic overlap. Typically, alveopalatals and non-central vowels contrast with other phonemes only in restricted environments.

Related to the problem of overlap is the determination of the status of the high central vocoid, which is equally as problematic as the alveopalatals or non-central vowels. In some environments, the manifestation of [ɨ] is phonemically significant (a part of the underlying structure of morphemes), while in other cases it is analysed as an epenthetic vocoid. The sometimes-indeterminate status of the high central vocoid is related to a possible diachronic explanation for its peculiar position in Alamlak phonology. This discussion will involve the question of vowelless words in a wider theoretical context.

The problem of phonemic overlap and the status of alveopalatal contours and non-central vocoids will be dealt with in the segmental phonology. A section on phonological changes (II.C.) is included to relate the present state to a historical process. It is suggested there that non-unique solutions in a synchronic analysis often result from processes of change which result in an unstable subsystem within the language. In these cases observations of diachronic tendencies is a legitimate means of choosing between alternative solutions. Hooper (1976:22) has said, "In cases where there is more than one interpretation of the synchronic data, we can determine what the strongest pattern is by observing the direction of the changes in the system."

The phonotactic patterns are discussed in section II.D., preceding a section devoted to the interpretation of the high central vocoid which draws heavily upon the phonotactics. The final section on intonation covers only basic intonational patterns.

B. SEGMENTAL PHONOLOGY

This section on segmental phonology will describe the contrastive underlying segments (i.e., phonemes) of morphemes, and the phonotactic and phonological rules whereby surface forms are derived from concatenated morphemes. Certain phonological rules (e.g., epenthesis, deletion, and vowel sequence rules) serve to conform underlying forms to the specifications of the phonotactics. Some of these rules operate on underlying forms before certain phonological rules and after others. The details of these ordering requirements have not been worked out here. The effects of these

rules such as epenthesis will be manifest in the phonetic transcriptions in this section.

1. CONSONANTS

Table 2: Consonant Phonemes

	Peripheral ¹			Peripheral
	Bilabial	Alveolar	Alveopalatal	
Stops vl.	p	t	(ç)	k
vd.	b	d	(j)	g
Fricatives	f	s	(š)	h
Vibrant		r		
Nasals	m	n	(ñ)	
Semi-vowels	w		y	

Most of the alveopalatal series (excluding the semi-vowel) are included as phonemes on the basis of a non-unique solution (i.e., one of a set of equally viable analyses). Their somewhat dubious status as phonemes is indicated by enclosing them in parentheses in Table two.

The phonetic manifestations of the consonants are summarized in Table three. The conditions under which each phone is manifested are stipulated by the phonological rules in this section. The phonetic manifestations of underlying segments which result in phonemic overlap would be described by morphophonemic rules in a

¹The use of feature notation in this chapter does not consistently follow any particular school of thought.

When specifying phonemes, parameters are selected so as to elucidate phonemic oppositions. Phonological rules are meant to indicate phonetic values of classes of phones involved in each rule.

Features are used as convenient abbreviations for natural sets of phones (e.g., peripheral); other symbols are used as abbreviations of sets of features where such symbols are commonly understood e.g.,

C = consonantal	fricative = +continuant +strident
ñ = voiced alveopalatal nasal	stop = -continuant -strident
continuant	obstruent = fricative, stop, or
mid (vowel) = -high -low	affricate

Post-palatal includes velar and backed velar (h) consonants.

classical phonemic analysis; non-overlapping manifestations would be described by allophonic statements.

Table 3: Phonetic Manifestations of Underlying Segments

Underlying segments	p b f t d s č j š k g h r	m n ñ w y
Non-overlapping phonetic manifestations	p b <u>p̣</u> t d s č j š k g	x ɣ ɣ ^y ɸ ʁ ʁ ^y m n ñ w y
Phonetic manifestations resulting in phonemic overlap	b b	č j š č j š
	g g*	ñ ñ

*This potential case of phonemic overlap has not been observed.

The alveopalatal series will be discussed after the other consonants have been dealt with.

a. NON-ALVEOPALATALS

Bilabial, alveolar, and post-palatal stops occur voiced and voiceless. Voiceless stops manifest light aspiration with variant manifestations of heavy aspiration being an artifact, along with vowel length, of higher level phonological phonemata which will be mentioned in the discussion of intonation (cf. II.F.). These redundant phonetic features will not be specified in phonetic transcription. Post-palatal stops are articulated with the tongue back at the velar point of articulation. Contrasts between stops are illustrated below, with the phones under consideration underlined.

/p/ vs. /b/

- 5(a). /pikt/ [ˈpikɪt] 'coconut shell bowl'
- (b). /bikatit/ [biˈkatit] 'point'
- (c). /bikt/ [ˈbikɪt] 'locust'
- (d). /tept/ [ˈtepɪt] 'leech'
- (e). /bebt/ [ˈbebɪt] 'bad'
- (f). /bapemr/ [baˈpemɪʁ] 'grandfather'

/t/ vs. /d/

- 6(a). /thit/ [t̥i'g̊it] 'turtle'
 (b). /dhirt/ [d̥i'g̊iɾ̥t] 'widow'
 (c). /nethonr/ [n̥ɛ̃t̥i'g̊oniɾ̥] 'bush spirit'
 (d). /nadbin/ [nad̥i'bin] 'fasten together'

/k/ vs. /g/

- 7(a). /kuñm/ [k̥uñ̥·um]¹ 'houses'
 (b). /guñm/ [g̥uñ̥um] 'fireflies/stars'

Non-alveopalatal fricatives occur with bilabial (/f/), alveolar (/s/), and backed velar (/h/) articulations. The redundant phonetic feature of backing in the case of the velar fricative will not be indicated in phonetic transcription. Contrasts with stops and other fricatives are illustrated in examples 8-11.

Bilabials

- 8(a). /pikm/ [p̥ik̥im] 'coconut shells'
 (b). /bëkm/ [b̥ëk̥im] 'plenty'
 (c). /fëkm/ [f̥ëk̥im] 'they vomited'

Alveolars

- 9(a). /tuim/ [t̥u'im] 'eyebrows'
 (b). /suim/ [s̥u'im] 'skirts'

Post-palatals

- 10(a). /kimt/ [k̥im̥it] 'cassowary-bone dagger'
 (b). /himt/ [h̥im̥it] 'red ant'
 (c). /git/ [g̥it] 'wild sago palm'
 (d). /tik̥t/ [t̥ik̥it] 'platform'
 (e). /thit/ [t̥i'g̊it] 'turtle'

¹The symbolization [·u] indicates a phonetically short vocoid. ALL instances of [i] and [u] are phonetically short and thus will not need to be marked as such in future transcriptions.

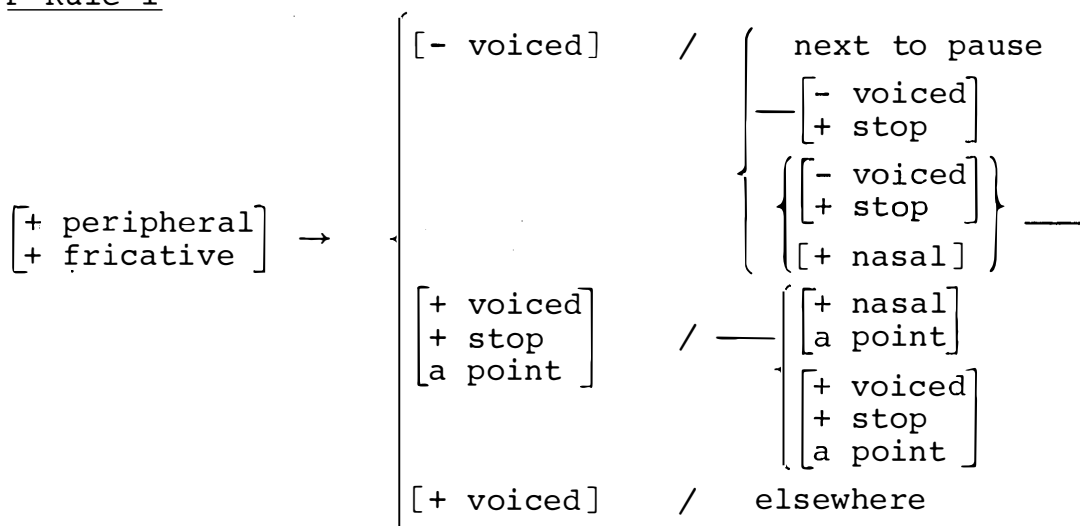
Fricatives

- 11(a). /fëkt/ [ˈf_̥ëkɪt] 'she vomited.'
 (b). /hikt/ [ˈxɪkɪt] 'thorn fish trap'
 (c). /suit/ [s_̥u'it] 'skirt'
 (d). /hukt/ [ˈxukɪt] 'a ripe (one)'

Contrasts involving alveolar /s/ are limited at best. The /s/ phoneme will be dealt with in greater detail in section b along with the alveopalatals.

The fricative consonants are phonetically underspecified, voicing being a redundant (i.e., phonetically predictable) feature. Peripheral fricatives (/f/ and /h/) form a natural class of fricatives as P Rule 1 indicates.

P Rule 1



Note: the [a point] feature indicates that classes of phones are homorganic, i.e., produced at the same point of articulation.

P Rule 1 specifies phonetic variations of peripheral fricatives in both non-alternating and alternating forms. The first part of the rule adding the feature [- voiced] occurs in both alternating and non-alternating morphemes but never involves phonemic overlap, e.g.,

- 12(a). /fëfhaf/ [ˈp_̥ëb_̥ɪgəp] 'dried fruits'
 (b). /riftkfët/ [ˈʔi_̥p_̥tkɪb_̥ët] 'to flatulate'
 (c). /miyakfɪnah/ [miyakpɪ'nəg] 'get arriving down'
 (d). /yarimfɪnah/ [yaɾimpɪ'nəg] 'arrive toward and level
 with the speaker'

- 12(e). /hahit/ [ˈxɑˈɡit] 'duck'
 (f). /wihkahr/ [wixˈkɑɡiʁ̥]. 'It is (not) raining.'
 (g). /tathaymërt/ [tatˈxemëʁ̥t] 'He hit (and) gave (it to) her.'

The second part of the rule, which adds the feature [+ voiced] and changes the articulatory feature to [+ stop], applies only to alternating forms, and complete phonemic overlap occurs in the specified environments.

The examples in 13 illustrate two of the three possible phonetic manifestations of the morpheme /-af/ 'prolative aspect'.

- 13(a). /wañafhatë/ [wañab̥iˈɡatë] 'having heard and separated'
 (b). /wañafmëm/ [waˈñab̥mëm] 'They heard and separated.'
 (c). /wañafbugamëm/ [wañab̥:uˈgamëm] 'They heard all and separated.'

The underlying /f/ in af contrasts with an underlying /b/ in beb 'bad' in examples 13(a) and 14(a), but they are phonetically identical in the (b) and (c) examples.

- 14(a). /wañbebhatë/ [wañbeb̥iˈɡatë] 'having heard badly'
 (b). /wañbebmëm/ [wañˈbeb̥mëm] 'They heard badly.'
 (c). /wañbebbugamëm/ [wañbeb̥:uˈgamëm] 'They heard all badly.'

The final part of P Rule 1 specifies these fricatives as [+ voiced] in all other environments, i.e., intervocalically and next to other consonants not covered by the first two parts of the rule.

- 15(a). /bifat/ [ˈbiβat] 'horsefly'
 (b). /hahit/ [ˈxɑˈɡit] 'duck'

Nasals are manifested in all word positions with the phonetic features indicated in Table 2, plus the redundant feature of [+ voiced]. Neutralization of nasal articulation occurs as shown in P Rule 2.

P Rule 2

$$[+ \text{ nasal}] \rightarrow [\text{a point}] / \text{---} \left\{ \begin{array}{l} [+ \text{ stop} \\ + \text{ voiced} \\ + \text{ coronal} \\ [+ \text{ stop} \\ - \text{ voiced} \\ + \text{ alveopal}] \\ [g] \end{array} \right.$$

The neutralization in these environments will be symbolized by the archiphoneme /N/. P Rule 2 specifies that the archiphoneme assimilates to the same point of articulation of certain following coronal stops (viz., d, č, j) and a voiced velar stop (i.e., g). Since an archiphoneme signals a neutralized contrast, it follows that no nasal of any heterorganic articulation immediately precedes these stops. The archiphoneme is illustrated in example 16 below.

- 16(a). /maNčifr/ [ma_̃'čib_̃ṛ̌] 'millipede'
 (b). /nuNɣwar/ ['nu_̃ɣwa_̃ṛ̌] 'bird'

The neutralization of nasal phonemes does not occur before other consonants as illustrated in example 17.

- 17(a). /ñiñpam/ ['ñi_̃ñpam] 'a derivative of a centipede'
 (b). /yënbrir/ ['yë_̃nbi_̃ṛ̌] (a lineage name)
 (c). /ftonkëmt/ [ɸton'këmit] 'You (pl) fried it.'
 (d). /wañkëmt/ [wa_̃'këmit] 'You (pl) heard it.'

Nasal contrasts, evident in example 17, are further illustrated in example 18.

- 18(a). /nuNɣwar/ ['nu_̃ɣwa_̃ṛ̌] 'bird'
 (b). /ñuNɣwër/ ['ñu_̃ɣwo_̃ṛ̌] 'he sounds'

The vibrant (/r/) contrasts with other consonants as illustrated in example 19 below.

- 19(a). /rëht/ ['ṛ̌ëgit] 'clay bowl'
 (b). /tëhmët/ ['ṭëgimët] 'She stood.'

- 19(c). /doht/ ['d_ogɪt] 'canoe'
 (d). /barit/ ['baɾɪt] 'widespot in river, lake (F)'
 (e). /watit/ ['waɪtɪt] 'hand drum'
 (f). /kadi/ ['ka'di] 'quiet'

The phonetic manifestations of /r/ are specified for [-voiced] ([ɾ̥]) and [+voiced] ([ɾ̥̄]) in the environments indicated in P Rule 3. The redundant phonetic feature of backing will not be indicated in future transcriptions.

P Rule 3

$$[+ \text{vibrant}] \rightarrow \begin{cases} [- \text{voiced}] / \left\{ \begin{array}{l} _____\# \\ \text{next to voiceless stop} \end{array} \right. \\ [+ \text{voiced}] / \text{elsewhere} \end{cases}$$

- 20(a). /barir/ ['baɾɪ̥ɾ̥] 'a wide spot in a river, lake (M)'
 (b). /bdërpam/ [bɪ'dë̥ɾ̥pam] 'dirt'
 (c). /kreNjipam/ ['kɾ̥æ̃jɪpam] 'clay'
 (d). /ript/ ['ɾ̥ɪpɪt] 'coconut-shell spoon'

The bilabial semi-vowel /w/ has the phonetic realizations specified by P Rule 4.

P Rule 4

$$/w/ \rightarrow \begin{cases} [^\circ] / \left[\begin{array}{l} V \\ -hi \end{array} \right] \text{ — } \left[\begin{array}{l} C \\ + \text{peripheral} \end{array} \right] \\ [^u] / \text{elsewhere} \end{cases}$$

- 21(a). /tonewm/ [to'ne^om] 'They are running.'
 (b). /pithiw/ [pɪtɪ'gɪ^um] 'They are talking.'

In future phonetic transcriptions, the convention will be followed whereby the [^u] variant will be written [w] and the [^\circ] as [^\circ].

Rules dealing with epenthesis, deletion, fusion, and syllabification of semi-vowels (SV) are particularly pertinent to the discussion of alveopalatals and the vowels. These rules, therefore, are discussed in the sections dealing with alveopalatal consonants and vowels.

b. ALVEOPALATALS

We now turn to the analysis of the alveopalatals. The alveopalatal stops are affricated, i.e., they manifest a homorganic fricative release.

As already stated, there is considerable phonemic overlap between alveopalatal and alveolar consonants. Contrast between the two series is limited, and variation among alveopalatals is considerable. We will first consider the evidence for the phonemic status of the alveopalatals and then consider alternative analyses.

The clearest evidence for contrastive alveopalatals is illustrated in examples 22-27.

/č/ vs. /t/

- 22(a). /kučr/ [ˈkuč̥i̯r̥] 'crow'
 (b). /nakutr/ [naˈkuci̯t̥r̥] 'He yelled.'

/j/ vs. /d/

- 23(a). /jiŋgt/ [ˈjiŋgit̥] 'insect basket'
 (b). /dift/ [ˈdiβit̥] 'white soil'
 (c). /naŋjērpam/ [naŋˈjē̯rpam] 'mayfly soup'
 (d). /naŋdēm̄r/ [naŋˈdē̯mi̯r̥] 'snake'

/š/ vs. /s/

- 24(a). /šuhmēt/ [ˈšugimēt̥] 'She fell.'
 (b). /suit/ [suiˈt̥] 'skirt'

/š/ vs. /t/

- 25(a). /mašat/ [ˈmaš̥at̥] 'much'
 (b). /mitat/ [ˈmit̥at̥] (a kind of snake (death adder?))

/ñ/ vs. /n/

- 26(a). /ñuŋgwēr/ [ˈñuŋgwo̯r̥] 'he sounds'
 (b). /nuŋgwar/ [ˈnuŋgwa̯r̥] 'bird'

/č/ vs. /j/ vs. /š/

- 27(a). /bičēt/ [ˈbič̥ēt̥] 'tooth'
 (b). /bijhat/ [ˈbi̯j̥gat̥] 'small fish'
 (c). /mašat/ [ˈmaš̥at̥] 'much'

Alveopalatals (with the exception of semi-vowel *y*) are relatively infrequently occurring phones; they occur most often at morpheme boundaries where they are almost always derivable from underlying alveolars by regular phonological processes. Since underlying alveopalatals (which cannot be derived from alveolars) also occur at morpheme boundaries, the potential for complete phonemic overlap is great. For example, the /d/ in 'canoe' and the /j/ in 'child's bow' are phonetically distinct in examples 28(a) and 29(a) but they are identical ([j]) in the (b) forms.

28(a). /doht/ ['dogɪt] 'canoe'

(b). /hay doht/ [ha'jogɪt] 'ironwood canoe'

29(a). /jubt/ ['jubɪt] 'child's bow'

(b). /hay jubt/ [ha'jubɪt] 'ironwood child's bow'

The alveopalatals which derive from underlying alveolars or *y*-alveolar sequences are derived by P Rules 5 and 6.¹

P Rule 5

[*y*] + [+ alveolar] → [+ alveopalatal]

¹If traditional morphophonemic rules were used here, then every non-vibrant-alveolar-initial (or final) morpheme would have alternate forms with an alveopalatal initial (or final) consonant. The morphophonemic rules needed to specify these alternates would be very cumbersome. The environments for alveopalatal-initial alternates would be something like this:

Y -final roots	}	
/alveopalatals/		
[ʃY]	}	
[ʁY]		
[morphological	}	
class of		
alveopalatal-		
hosting		
roots		

Furthermore, an even more complicated allophonic statement involving the same environments would be required to derive non-phonemic vibrant alveopalatals ([ʃY] and [ʁY]).

By dispensing with morphophonemic rules the artificial distinction between alveopalatal phonemes and alveopalatal vibrant allophones in the structural descriptions of rules is abandoned. The unnecessary complexity of having equivalent rules operating at different levels in the derivation is done away with as well. Furthermore, by allowing, in principle, abstract underlying forms, the morphophonemic rules of a classical approach can be reduced to a few maximally general, simple phonetic rules.

P Rule 6

[+ alveolar] → [+ alveopalatal] / [+ alveopalatal] ____

P Rule 5 is illustrated by example 30.

30. /nunay - t/ ['nunač] 'earthquake'
 earthquake - 3SF

The underlying form of 'earthquake' (nunay) is the same as one of its alternating forms (example 31) from which the form [nuna] in example 30 may be naturally derived.

31. /nunay - e - t/ ['nunayet] 'It is an earthquake.'
 COP.

The underlying form of the third-person-singular-femine suffix (-t) is likewise the same as one of its alternating forms (example 31) from which its other form may be naturally derived, by P Rule 5 in example 30 and by P Rule 6 in example 32.

32. /kuñ-t/ ['kuñ-č] 'house'

The root for 'house' /kuñ/ is a non-alternating root as illustrated in the following paradigm:

- ['kuñet] 'It is a house (3SF).'
 ['kuñč] 'house (3SF)'
 ['kuñum] 'houses (3Pl)'

We have suggested (pp.) that completely abstract forms be permitted only in alternating forms which provide certain evidence for an abstract analysis. A less constrained analysis allowing for abstract underlying forms for non-alternating morphemes could phonetically predict all alveopalatals by analysing them as fusions of a palatal semi-vowel and an alveolar consonant.

A strong point in favour of the more abstract solution is the distributional constrain on *y* such that *y* never occurs next to an alveolar consonant in surface (i.e., phonetic) manifestations. We have presented evidence above that *y* does occur with alveolars in underlying forms but it always fuses with the alveolar to

produce a phonetic alveopalatal. This strongly suggests that alveopalatals which are in non-alternating morphemes may derive from a fusion of underlying *y* and alveolar *s* as well. Eunice Pike (1964) appeals to this type of distributional gap as justification for postulating completely abstract forms in other Sepik languages of Papua New Guinea.

While the arguments for a more abstract analysis are viable in themselves, the abstract analysis is rejected here in favour of a more concrete analysis. E. Pike's (1964) arguments from distributional criteria are important; however, Hyman's (1975:84) comment is relevant here, "There seem to be no constraints on the degree of abstractness allowable in generative phonology." While Pike's analysis is not a generative one in the current sense, the same criticism holds for her arguments. There are no objective constraints, for example, on how many gaps may occur in a pattern before distributional gaps can no longer be used to justify abstract underlying forms. Further evidence against the more abstract analysis will be mentioned in the section on phonological changes (II.C.).

A second alternative analysis of the alveopalatals is that suggested in Bruce (1975:101). There [č] and [š] were collapsed with [s] as a single phoneme /s/ leaving only /j/ and /ñ/ as pure alveopalatal consonants (plus the semi-vowel /y/). It is possible to specify phonetic variants of /s/, with some exceptions, as in Rule A.

Rule A

$$/s/ \rightarrow \begin{cases} [s] \sim [\š] / \# \text{ —} \\ \quad \quad \quad [\š] / \text{next to a stop} \\ [š] \sim [č] / \text{elsewhere} \end{cases}$$

- 33(a). /suhkfët/ [ˈsuxkiβët] ~ [ˈšuxkiβët] 'to fall'
 (b). /fuspam/ [ˈpušpam] 'dust'
 (c). /bisët/ [ˈbišët] ~ [ˈbičët] 'tooth'

One clear exception to Rule A is /suit/ 'skirt' which always manifests an alveolar fricative word-initially.

While arguing for the nonphonemic status of [č] and [š], this analysis actually argues against the abstract analysis (the first alternative analysis which was considered). This is true since if alveopalatal [š] derives in one instance from a fusion of *y* and [s], it seems strange that the resulting alveopalatal should in some cases freely fluctuate with the alveolar [s] with no sign of the proposed underlying *y*. If the abstract analysis describes a pre-historical stage, then it appears that these particular alveopalatals have since been interpreted as phonemes themselves and are now fluctuating with or perhaps have collapsed as one phoneme with the alveolar /s/. Since there is comparative evidence to suggest that the abstract analysis does in fact reflect a historical stage in the Alambalak language, this analysis concludes that three phonemes */č/, */š/, and */s/ have collapsed into one synchronic phoneme /s/.¹

While the analysis of the voiceless alveopalatals and /s/ captures a general tendency, expressed by Rule A, it is rejected as a valid conclusion as to the status of these segments in Alambalak phonology.

In traditional phonemic analysis, fluctuating phonemes are separate phonemes as long as they contrast in some environment. As long as /suit/ [suit] 'skirt' persists, in contrast to forms like /suh/ ['sug] ~ ['šug] 'fall', there is at least some reason to postulate a phonemic contrast between alveolar /s/ and alveopalatal /š/. Rule A (p.) suggests furthermore, that [č], [š], and [s] are either freely fluctuating or are in complementary distribution. There are, however, several exceptions to Rule A.

¹Correspondences between the Karawari and Kuvenmas dialects of Alambalak suggest that P Rule 22 (cf. p.66, ay → [ε] / ___ {C } which still operates in the Karawari dialect did at one time operate in the Kuvenmas dialect. An older ay plus alveolar consonant sequence resulted in [a] plus alveopalatal in the Karawari dialect and [ε] plus alveolar in the Kuvenmas dialect. Compare these correspondences taken from Bruce (1975:100).

<u>English</u>	<u>Karawari</u>	<u>Kuvenmas</u>	<u>Reconstruction</u>
1. guardian spirits	[na ^č š ^š uŋ'gwařm]	[nɛsuŋ'gwařm]	*/nay ^t /s _u Ngwarm/
2. older brother	[na'jɛm ^ř]	[nɛ'dɛm ^ř]	*/naydɛmr/
3. mayfly soup	[nañ'jɛř ^ř pam]	[nɛn'dɛř ^ř bam]	*/nayndər ^p /b _{am} /

For example, the rule states that [s] and [š] fluctuate word initially. One exception to this (/suit/ 'skirt') has already been mentioned. Example 34 manifests [š] and [č] fluctuating initially, and is thus another exception.

34. /sifinëht/ [šɪbɪ'nëgit] ~ [čɪbɪ'nëgit] 'empty'

Example 35 manifests all three ([s], [š] and [č]) fluctuating initially.

35. [ˈsimbut] ~ [ˈšimbut] ~ [ˈčimbut] (place name)

Rule A also states that except word initially or next to a stop, [š] and [č] freely fluctuate. There are examples, however, where individual vocabulary items manifest one or the other phone without variation, e.g.,

36. [ˈmašat] 'much'

37. [dukˈačim] 'big mouth fish'

In another case all three ([s], [š] and [č]) have been observed to fluctuate word medially instead of the common [š] ~ [č] fluctuation.

38. [na $\left\{\begin{smallmatrix} s \\ š \\ č \end{smallmatrix}\right\}$ uŋˈgwařim] 'guardian spirits'

This type of sporadic fluctuation of forms which are not amenable to phonological generalization is indicative of a diachronic change which is still in progress. The second alternative analysis has regarded the change (the collapse of [s], [š] and [č] as a single phoneme) to be complete, with a few residual forms left in the system. The analysis suggested here argues that there are no 'exceptional' forms and that the phonemes must be kept separate in spite of somewhat patterned fluctuation. A convention for indicating underlying forms will be followed whereby /s/ will represent the phoneme in cases of fluctuating

forms; /š/ and /č/ will be used when they occur without fluctuating. This convention will obscure the possible phonetic realization of some forms therefore Rule A will be retained in the description as a diachronic tendency and words which do not conform to that general tendency will be bracketed with verticle lines. (| |) indicating that the form is one of a set of morphologically defined allomorphs. Thus /fuspam/ 'dust' is predictably [¹pušpam] from Rule A; /mašat/ 'much' and /dukiačim/ 'big mouth fish' are forms without fluctuation; and |nasuNgwarm| indicates that there are non-phonologically conditioned allomorphs of 'guardian spirits' which do not conform to Rule A. Forms with phonologically predictable allomorphs will be written in their single underlying form; e.g., /kuñt/ 'house' is predictably [¹kuñč] by Rule 5 (p.).

c. INTERPRETATION

The analysis of consonants which has been proposed in this section (B.1) presupposes interpretations of the phonetic data which we will now discuss. Certain non-syllabic vocoids have been interpreted as consonantal rather than vocalic and certain sequences of phones as sequences of phonemes rather than complex unit phonemes.

The non-syllabic vocoids in the sequences $\left\{ \begin{smallmatrix} C \\ \# \end{smallmatrix} \right\} i v$, $CV^i \left\{ \begin{smallmatrix} C \\ \# \end{smallmatrix} \right\}$, $\left\{ \begin{smallmatrix} C \\ \# \end{smallmatrix} \right\} u v$, and $CV^u C$ are interpreted as /y/ in the first two instances where no evidence from alternating forms supports postulating an underlying /i/, and /w/ in the latter two instances.

The justification of these interpretations is based primarily on consonant-vowel contrasts.

/y/ vs. /i/

39(a). /kyakt/ [ⁱkⁱ'akit] 'door'

(b). /akianr/ [akiⁱ'aniř] 'Let me tie him up.'

There is no morphological justification for the non-syllabic [ⁱ] in example 39(b) to be included in the underlying form. It is merely an epenthetic semi-vowel inserted by P Rule 18. Given that fact, there is no way to derive both the syllabic [i] of 39(b) and the non-syllabic [ⁱ] of 39(a) from the same

phoneme (i.e., /i/) by natural phonological processes. If the [i̠] in 39(a) were an underlying /i/, then an epenthetic [y] should intervene between it and the following vowel exactly as it has in example 39(b).

An unstressed syllabic [i] never follows another vowel therefore there is no clear contrast of /y/ and /i/ in that position, only non-syllabic [i̠] occurs. The interpretation of [i̠] in this position as underlying /y/ by analogy with interpretations of [i̠] in other environments does not add any complexity to the phonology in terms of consonant sequences. Formally an [i̠] in this position often functionally parallels alveopalatal phones and is in these cases best considered to be consonantal (cf. P Rules 5 and 6 and the phonological changes made by the younger lectal group whereby /y/ is grouped with the alveopalatals in P Rule 6, p. 45).

/w/ vs. /u/

- 40(a). /yowt/ [i̠ⁱo^ut] 'mosquito'
 (b). /toukfët/ [i̠ⁱtouki^ubët] 'to dig'
 (c). /wompam/ [i̠^uompam] 'again'
 (d). /buwohr/ [bu^uogi^uh^ur] 'blow fish'
 (e). /yuorht/ [i̠^uu^uo^ur^uh^ut] 'river reed'

The contrast between a syllabic and non-syllabic high back vocoid is based on relative duration. The high back vocoid in example 40(a) is shorter than the preceding vocoid whereas the one in example (b) is of comparable length to the preceding vocoid indicating a sequence of two syllables. Examples 40(c)-(e) do not provide cases of clear contrast but the non-syllabic [u̠]'s in example (c) and (d) clearly distribute in syllable-initial positions which is typically a consonantal function. To interpret these non-syllabic vocoids as consonants rather than vowels is a simpler accounting in terms of word and syllable structures. While complex syllable nuclei are required (cf. vowel sequences, section D.) they always occur with a consonant onset, thus an additional syllable pattern, ^vV, would result from interpreting the [u̠]'s of (c) and (d) as vowels. Furthermore, vowel-initial words are rare, apparently as a result of an

historical change which introduced a constraint against vowel-initial words (cf. footnote on p.). If word-initial [ⁱ] and [^u] were interpreted to be vowels, approximately 18% of Alamlak words would be vowel-initial, and /a/ would be the only non-high vowel which occurred in the word-initial position, and even /a/ is only infrequently word initial.

For the reasons outlined above, most non-syllabic high vocoids have been interpreted to be semi-vowels, i.e., consonants. That interpretation in many cases results in consonant semi-vowel sequences which require further interpretation. Next we will consider these and other contoid sequences which must be interpreted as either a sequence of phonemes or as a complex unit phoneme. It will be shown that all sequences of [Cy], [Cw] and homorganic nasal plus stop should be interpreted as sequences rather than complex phonemes.

[Cy]

The phoneme /y/ clusters with all but four of the consonants, the exceptions being /b/, /t/, /y/, and /h/. The interpretation chosen here adds no further complexity to consonant cluster patterns. It avoids considerable complexity in the phoneme inventory which would result from adding ten phonemes while leaving erratic gaps in a hypothetical palatal series (e.g., /p^y/ but no /b^y/, /d^y/ but no /t^y/).

[Cw]

The phoneme /w/ clusters with ten of the sixteen consonants (p, t, k, g, f, h, n, š, r, w). These clusters occur more frequently at morpheme boundaries than in root-medial positions. The reasons for our interpretation of [Cw] sequences parallel those for [Cy] sequences. No further complexity is added to consonant cluster patterns. /w/ also readily clusters as the first of two consonants. Secondly, added complexity of the phoneme inventory is avoided. Finally, considerable morphological complexity is avoided since if [Cw] sequences were interpreted as unit phonemes, every consonant-final verb root would manifest labialized-consonant-final roots in the present tense and non-labialized-consonant-final forms in all other tenses. By the

interpretation of [Cw] as a sequence of phonemes, the /w/ of [Cw] sequences in present tense verb forms is the first segment of the imperfective aspect marker -wë.

Nasal Plus Homorganic Stop

The interpretation of sequences of nasal plus homorganic stop is not as straightforward as the interpretation of [Cw] and [Cy] sequences. Typologically it is common in Papua New Guinea for the voiced stop series to be prenasalized. This is especially true for Sepik languages. There is, furthermore, some residual evidence of a prenasalized stop series in Alamblak historically. This fact will be mentioned again in chapter X. For example, the neutralization of nasal articulation before /d/, /j/, /g/, and /č/ (nasals being homorganic with the following stop) is suggestive of prenasalization. Some voiced stop initial morphemes become prenasalized word-medially in complex constructions, a likely context for archaic reflexes to be retained. For example, /mɨy/ 'tree' plus /giñt/ 'protrusion' renders [mɨŋ¹giñč] 'stick'. Note further evidence of a possible archaism in this compound construction: The /ɨy/ sequence of 'tree' does not fuse to [i] in this position as it does in analogous environments in current productive forms, e.g., /mɨym/ [mim] 'trees'.

There is sufficient evidence, however, for suggesting that any proposed historical prenasalized series must have broken down in modern Alamblak and synchronically the nasal-stop sequences should be interpreted as sequences rather than complex unit phonemes. Firstly, simple, i.e., non-prenasalized, voiced stops occur, both word initially and medially. Contrasts between simple and prenasalized stops would occur, therefore, with a unit interpretation of nasal plus homorganic stop, e.g., /baŋgot/ [baŋgot] 'knee' vs. /bugont/ [bugont] 'butress'. Contrasting series of simple vs. prenasalized voiced stops is more typologically questionable than having a simple voiced stop series in place of a prenasalized one. The interpretation adopted here avoids complicating the phoneme inventory while maintaining an historical explanation for residual cases.

Secondly, heterorganic clusters of nasal plus voiced stop occur with /b/, e.g., /yënbrim/ [yënbɨřim] (*lineage name*).

These cases can only be interpreted as sequences of nasal plus stop phonemes. The interpretation of all cases of nasal plus stop as sequences, thus does not complicate distributional patterns of consonant sequences.

2. VOWELS

The vowel system, like the consonant system, is amenable to a more abstract solution than the one argued for here. As with the consonants, it will be argued here that the abstract solution reflects an historical change rather than a present synchronic state.

Table 4: Vowels

	front	-front	
		-rounded	+rounded
high	i	ɨ	u
mid	e	ë	o
low		a	

The phonetic manifestations of the vowels are indicated on Table 5. The conditions under which each phone is manifested are stipulated by the phonological rules in this section.

a. NON-CENTRAL VOWELS

/i/

The high front vowel (/i/) contrasts with other vowels as illustrated in examples 41-44. The phonetic transcriptions [i] and [ɨ] include the redundant feature [- rounded].

/i/ vs. /e/ 41(a). /tikt/ [ˈtɨkɨt] 'platform'.
 (b). /tekt/ [ˈtekɨt] 'river'

vs. /ɨ/ 42. /tikt/ [ˈtɨkɨt] (a kind of tree)

vs. /ë/ 43(a). /kikwa/ [ˈkɨkwa] 'I am painting.'
 (b). /këkwa/ [ˈkëkwa] 'I am vomiting.'

vs. /u/ 44. /kukwa/ [ˈkukwa] 'I am bathing.'

Table 5: Phonetic Manifestations of Underlying Segments and Sequences

Underlying segments and sequences	i e ɨ ɛ̃ a u o y ɨy ay uy oy aw
Non-overlapping phonetic manifestations	i e ɨ ɛ̃ a u o y ay uy oy aw ɨ ε ·u ɔ ʌ
Phonetic manifestations resulting in phonemic overlap	i i i e e ε ε / [-coronal] ɨ ɨ ɨ / [+alveopalatal] o o o ·u ·u ·u* ·u* a a [+alveopalatal] u u u

* These potential cases of phonemic overlap have not been observed.

An underlying high front vowel is phonetically modified by adding the features [+ lax] and [+ tense] as specified by P Rule 7.

P Rule 7

$$\begin{array}{l}
 \left[\begin{array}{l} + \text{ hi} \\ + \text{ fr} \end{array} \right] \rightarrow \left[\begin{array}{l} + \text{ lax} \sim + \text{ tense} / \left[\begin{array}{l} \text{---} \left\{ \begin{array}{l} [+ \text{ vibrant}] \\ [+ \text{ alveopalatal}] \end{array} \right\} \\ [+ \text{ alveopalatal}] \text{---} (C) * \end{array} \right. \\ \left. \begin{array}{l} [y] \text{---} \\ [- \text{ stress}] \\ [+ \text{ tense}] / \text{ elsewhere} \end{array} \right. \end{array} \right.
 \end{array}$$

* Condition: (C) is not a prepause [+ bilabial].

The phonetic realizations of underlying /i/ are illustrated in examples 45-49.

/i/ → [i]
45. /wat t/ [ˈwatit] 'hand drum (feminine)'

/i/ → [ɪ] / _____ [+ vibrant]
46. /watir/ [ˈwatɪʀ] 'hand drum (masculine)'

/i/ → [ɪ] / _____ [+ alveopalatal]
47. /ñiñt/ [ˈñɪñč] 'centipede'

/i/ → [i] / _____ [+ bilabial] #
48. /kafNjim/ [ˈkabiñjim] (a lineage name)

/i/ → [ɪ] ~ [i] / [y] _____
[- stress]
49. /yinemt/ [yɪˈnemit] ~ [yiˈnemit] 'grandchild'

/e/

The mid front vowel (/e/) contrasts with the other vowels as illustrated in examples 41, and 50-54. The phonetic transcriptions [e] and [ɛ] further specify /e/ as [- rounded].

/e/ vs. /i/ 50(a). /teNgt/ [ˈtɛŋgɪt] 'to blow'
(b). /tɪNgt/ [ˈtɪŋgɪt] 'mouth'

vs. /ë/ 51(a). /bekfat/ [ˈbɛkɪbət] 'place for securing
canoes'
(b). /bëkm/ [ˈbɛ̃kɪm] 'plenty'

vs. /a/ 52. /taNgt/ [ˈtɑŋgɪt] 'firewood bag'

vs. /o/ 53. /toNgt/ [ˈtɔŋgɪt] (a kind of carving)

vs. /u/ 54. /bukitt/ [ˈbʊkɪtɪt] 'head waters'

An underlying mid front vowel is phonetically modified according to P Rules 8 and 9. By P Rule 8 the features [+ lax] and [+ tense] are specified under certain circumstances.

P Rule 8

$$\left[\begin{array}{l} + \text{ mid} \\ + \text{ front} \end{array} \right] \rightarrow \left\{ \begin{array}{l} [+ \text{ lax}] / \left\{ \begin{array}{l} \overline{[- \text{ stress}]} \\ \overline{[+ \text{ stress}]} \end{array} \right. \text{ C \#} \\ [+ \text{ tense}] / \text{ elsewhere} \end{array} \right.$$

The first part of P Rule 8 produces phonemic overlap in some environments with an underlying /ay/ sequence. These cases will be discussed under P Rule 22 which deals with the fusion of underlying /ay/ resulting in a front vocoid. P Rule 8 is illustrated in 55.

- 55(a). /metet/ [ˈmetet] 'she is a woman'
 (b). /biket/ [biˈket] 'It is a locust.'

P Rule 9 is a dissimilation rule whereby a mid front vocoid is raised to a high vocoid. This rule is functionally equivalent to the other dissimilation rule, P Rule 12; both rules raise the specified vocoid the equivalent of one place on the phoneme chart. They are distinct rules, however, in that they have different structural descriptions.

P Rule 9

$$\left[\begin{array}{l} + \text{ mid} \\ + \text{ front} \end{array} \right] \rightarrow [i] / \text{ — } \left[\begin{array}{l} + \text{ mid} \\ + \text{ front} \end{array} \right]$$

A mid front vocoid is raised to a high vocoid preceding a mid front vocoid. This rule will be necessary for the derivation of one of the alternates of the verb /nayay/ 'come' (cf. p.); that derivation will be most easily illustrated after the introduction of more phonological rules. This rule is only tenuously motivated since it is required just to derive an alternate of the abstract form /nayay/ 'come'. It is included here for two reasons. It parallels the well motivated dissimilation rule P Rule 12. Secondly, the formulation of the highly abstract /nayay/ seems justified inasmuch as its highly variable surface alternations can be regularly derived by the operation of other well motivated P rules. This is true for all but the final

step in the derivation of the [nⁱe] alternate of /naya/ 'come'.

/u/

The high rounded vowel (/u/) contrasts with other vowels as illustrated in examples 43(a), 44, 51(a), 54, and 56-58 below. /u/ is automatically specified as [+ tense] and [+ back] in all of its surface manifestations (indicated by the phonetic transcription [u]).

/u/ vs. /i/ 56(a). /bukitt/ [ˈbukitt] 'head waters'
 (b). /bikt/ [ˈbikt] 'locust'

vs. /ë/ 57(a). /kukwa/ [ˈkukwa] 'I am bathing.'
 (b). /këkwa/ [ˈkëkwa] 'I am vomiting.'

vs. /o/ 58(a). /kukrwët/ [ˈkukriwut] 'it is burning'
 (b). /kokrwët/ [ˈkokriwut] 'it dislikes'

/o/

The mid rounded vowel (/o/) contrasts with other vowels as illustrated in examples 50(a), 53, 58, and 59-61 below. The phonetic transcription [o] further specifies /o/ as [+ tense] and [+ back].

/o/ vs. /i/ 59(a). /toNgt/ [ˈtongit] (a kind of carving)
 (b). /tiNgt/ [ˈtingit] 'mouth'

vs. /ë/ 60(a). /rohkfët/ [ˈroxkibët] 'to be seated'
 (b). /rëhkfët/ [ˈrëxkibët] 'to boil'

vs. /a/ 61. /taNgt/ [ˈtangit] 'firewood bag'

An underlying mid rounded vowel is phonetically modified according to P Rule 11. This modification results in partial overlap with an underlying /i/ in different environments (cf. P Rule 16).

P Rule 11

$$\begin{bmatrix} + \text{ mid} \\ + \text{ rnd} \end{bmatrix} \rightarrow [+ \text{ short}] / [+ \text{ post-pal}] \text{ ______ } [+ \text{ alveolar}]$$

- 62(a). /hot/ [¹x·ot] 'adze'
 (b). /bakot/ [¹bak·ot] (a kind of sea shell)

These same underlying forms are manifested with a long [o] in other morphological combinations, e.g.,

- 63(a). /ho - e - t/ [¹xoet] 'It is an adze.'
 (b). /bako - e - t/ [¹bakoet] 'It is (a kind of sea shell).'

b. CENTRAL VOWELS

The central vowels present a problem for the analysis of the vowel system in at least two areas. Determining the status of the high central vocoid [ɨ] is particularly problematic. In section E that problem will be dealt with in detail. Secondly, modifications of central vowels and fusions of central vowels with semi-vowels regularly produce phonetically non-central vocoids. These processes raise the question of an alternative abstract analysis which derives all non-central vocoids from central vowels interacting with semi-vowels. The three-central-vowel hypothesis will be discussed as an alternative solution later in this section.

/a/

The low vowel (/a/) contrasts with other vowels as illustrated in examples 50(a), 52, 59(a), 61 and 64 below. The phonetic transcription [a] is here defined to include the redundant features slightly fronted central vocoid.

- /a/ vs. /ë/ 64(a). /bakom/ [¹b_akom] (a kind of sea shell (pl.))
 (b). /bëkm/ [¹b_ëkim] 'plenty'

An underlying low vowel is raised to a mid vocoid as indicated by P Rule 12.

P Rule 12

[+ low] → [+ mid] / _____ {_{SV}^C} ([+] C)_o [a]

P Rule 12 states that [a] is raised to a mid vocoid (the redundant [- rounded] feature remaining unaltered) preceding a syllable containing an [a] with or without one or more intervening syllables which contain a high central vocoid.

The details of the conditions on P Rule 12 have not yet been completely worked out.¹ It clearly operates in a variety of circumstances and its inclusion in the phonological rules simplifies the description at various independent points. The rule may be observed by comparing the forms in examples 65 and 66.

65(a). /hiŋna - ni - rahr/ [xiŋgin_{ni}¹ʔagi^ʔŋ]
work - go - FUT.3SM
'He will work (and) go.'

(b). /hiŋna - rahr/ [xiŋgin_Λ¹ʔagi^ʔŋ]
work - FUT.3SM
'He will work.'

66(a). /hi - rhwat - fiŋ - nē/ [xi^ʔi¹gwa_ti_bi_ni_nē]
give - FUT - 2D - 1D

(b). /hi - rhwat - fiŋ - a/ [xi^ʔi¹gwa_ti_bi_na]²
give - FUT - 2D - 1S

/ë/

The mid unrounded nonfront vowel (/ë/) contrasts with the other vowels as illustrated in examples 43, 51, 57, 60, 64, and 67 below. The phonetic transcription [ë] includes the redundant features of central-back, and [+ tense].

¹Bach and Harms (1972) discuss a vowel dissimilation rule in the Russian Oboyan dialect. They look at it as a "crazy rule" which results from simplifying type rule changes historically and the generalization of the resulting rules. Full specification of the Alambalak vowel dissimilation rule may not be possible until its historical development is understood.

²In this example the /a/ which has been raised to [Λ] has undergone further modification to [o] by P Rule 14.

- /ë/ vs. /i/ 67(a). /bëkm/ [¹bëkim] 'plenty'
 (b). /bikm/ [¹bikim] 'locusts'

An underlying /ë/ is susceptible to phonetic modification as specified by P Rules 13 - 15. P Rule 13 adds the features [+ lax] and [+ rounded] (i.e., becomes [ɔ]) in a prepause position following bilabials, and specifies that the mid vocoid alternates with [i] in a pretonic position. According to the second part of the rule /ë/ may overlap with /i/ in the environments specified by the rule.

P Rule 13

$$\begin{bmatrix} + \text{mid} \\ - \text{fr} \\ - \text{rnd} \end{bmatrix} \rightarrow \begin{cases} [\text{ɔ}] & / & [+ \text{bilabial}] \text{ ______ } \#\# \\ [+ \text{mid}] \sim [+ \text{hi}] & / & \text{______ } \begin{matrix} \text{C} & \text{V} \\ [+ \text{stress}] \end{matrix} \end{cases}$$

In 68 /ë/ is manifested with no change in its surface form. Example 69 illustrates the first part of the rule and 70 the last part.

- 68(a). /këtë/ [¹këtë] 'later'
 (b). /kitwënë/ [¹kitwënë] 'We (two) are going.'

- 69(a) /kitwë/ [¹kɪtwɔ] 'You are going.'
 (b). /brbë/ [¹bɪřɪbɔ] 'nearby'

70. /hemëkëmr/ [xemë¹këmiř] ~ [xemi¹këmiř] 'You (pl.) gave him.'

The outputs of P Rules 12 and 13 are possible inputs for P Rule 14. The output of P Rule 14 results in potential phonemic overlap with /ë/, /a/, /o/ and /oy/.

P Rule 14

$$\begin{bmatrix} + \text{mid} \\ - \text{front} \\ - \text{rnd} \end{bmatrix} \rightarrow [\text{o}] / \begin{cases} (\text{C}) [\text{w}] \text{ ______ } \left\{ \begin{matrix} [+ \text{peripheral}] \\ [+ \text{coronal}] \\ [- \text{nasal}] \end{matrix} \right\} \\ [+ \text{bilabial}] \text{ ______ } [\text{w}] (\text{C}) \end{cases}$$

71. /hirhwatfina/ 'You (two) will (irrealis) give me.'

Step I (P Rule 12): *[xɪři'ɣwɔtɪβina]

Step II (P Rule 14): [xɪři'ɣwotɪβina]

P Rule 15 potentially produces phonemic overlap with /i/, /ë/, /a/, and /o/ although no cases of overlap with /a/ and /o/ which are a result of this rule have been observed.

P Rule 15

[o] → [·u] / $\left[\begin{array}{c} \text{V} \\ + \text{hi} \end{array} \right]$ ([- post-pal]) [w] — $\left[\begin{array}{c} + \text{alveolar} \\ - \text{nasal} \end{array} \right]$

72. /kitwët/ 'she is going.'

Step I (Rule 14): *['kitwot]

Step II (Rule 15): ['kitwut]

With P Rules 13-15 the alternating forms of the imperfective aspect become regularly derivable from -wë.¹

Table 6: Phonetic Present Tense Paradigm of kit 'go'

	Singular	Dual	Plural
1	'kit <u>w</u> a	'kitw <u>ë</u> në	'kit w <u>ë</u> nëm
2	'kit <u>w</u> o	kit'w <u>o</u> βin	kit'w <u>o</u> kë
3 M	'kitw <u>o</u> Ř		
F	'kitw <u>u</u> t	'kitw <u>o</u> p	'kitw <u>o</u> m

/i/

The high unrounded nonfront vowel (/i/) contrasts with other vowels as illustrated in examples 41(a), 42, 50, 56, 59, and 67. The phonetic transcription [i] includes the redundant features [+ central] and [+ short].

An underlying /i/ is phonetically modified according to P Rule 16.

¹The imperfective aspect allomorphs are as follows: /-w/ next to a vowel or semi-vowel, and /-wë/ elsewhere.

P Rule 16

$$\begin{bmatrix} + \text{ hi} \\ - \text{ fr} \\ - \text{ rnd} \end{bmatrix} \rightarrow [\cdot\text{u}] / [\text{w}] \text{ ____}$$

The examples in 73 illustrate unmodified and modified phonetic manifestations of /ɨ/.

- 73(a). /bikm/ [ˈbɨkɨm] 'locusts'
 (b). /witt/ [ˈwutut] 'fat globule'

A high central vocoid is manifested by short nonfront vocoids according to P Rule 17.

P Rule 17

$$\begin{bmatrix} + \text{ hi} \\ - \text{ fr} \\ - \text{ rnd} \end{bmatrix} \rightarrow \begin{cases} \begin{bmatrix} + \text{ short} \\ \text{a artic} \end{bmatrix} / \begin{bmatrix} + \text{ short} \\ - \text{ front} \\ \text{a artic} \end{bmatrix} \text{ C ____} \\ [\cdot\text{o}] / [+ \text{ bilabial}] \text{ ____} \begin{bmatrix} + \text{ post-pal} \\ + \text{ fricative} \end{bmatrix} \end{cases}$$

Note: [a artic] is an abbreviation for indicating identical articulatory features of roundedness and tongue position.

An epenthetic [ɨ] harmonizes with the phone in the preceding syllable according to the first part of the rule as illustrated in the second syllable of example 73(b) and 74(b). In example 74(a) an epenthetic [ɨ] and in (b) an underlying /ɨ/ are manifested as short mid back tense rounded vocoids according to the second part of P Rule 17.

- 74(a). /fhat/ [p·oˈgat] 'egg'
 (b). /fiht/ [ˈp·og·ot] 'wound'

c. MISCELLANEOUS RULES AND ORDERING

In section 4) we will consider ordering constraints on rules. Rules of epenthesis, deletion and syllabification, however, are unordered with respect to other phonological rules. These rules apply whenever the specified conditions exist.

1) EPENTHESIS

The epenthesis rule involving the high central vocoid will be discussed in section E (p. 94). The other epenthetic segment in the phonology is the semi-vocoid [y].

P Rule 18

$$\left[\begin{array}{c} + V \\ - \text{back} \end{array} \right]_a V_b \rightarrow \left[\begin{array}{c} + V \\ - \text{back} \end{array} \right]_a y V_b$$

Condition: V_b has an identical or lower articulation than V_a .

P Rule 18 states that sequences of a front or central vocoid followed by another vocoid are separated by a transitional [y] when the second vocoid has an identical or lower articulation than the first.¹ There are two exceptions to this rule. The sequence ea is realised phonetically as one syllable with the low vowel carrying the peak of the syllable (i.e., [^ea]); the sequence ue is separated by the epenthetic [y], e.g., /yemuət/ ['yemuyet] 'it is (a kind of tree)'.

75. /tatmäa/ *['tatmäya] 'I hit (something).'

The phonetic representation of example 75 is not specified since further modifications occur through fusion rules which will be discussed in section 3) (p. 66).

2) DELETION AND SYLLABIFICATION

An underlying low central vowel (/a/) optionally deletes under the circumstances described in P Rule 19.

¹It is possible that this rule had something to do with the origin of the feature of verb conjugations (cf. Table 60 p. 225) in which the last vowel of the root is diphthongized in the Immediate past and present tenses. The first person actor suffix /-a/ is affixed to the root without an intervening tense morpheme in the Immediate past tense generally resulting in a vowel sequence with the second vowel (a) being the same or lower than the first.

P Rule 19

$$[a] \rightarrow [a] \sim \emptyset / \text{---} \left[\begin{array}{l} + \text{mid} \\ + \text{front} \\ + \text{stress} \end{array} \right]$$

76(a). /bu - pa - et - t/ [bu¹petit] 'It has water.'
rain- DER- POSSD-3SF

(b). /rpa - eh - r/ [iři¹pegiř] 'first'
one - ORD - 3SM

The semi-vowel [y] is deleted according to P Rule 20.

P Rule 20

$$[y] \rightarrow \emptyset / \left\{ \begin{array}{l} [w] \\ [v] \\ [+ \text{rnd}] \end{array} \right\} \text{---} \left[\begin{array}{l} C \\ - \text{alveolar} \end{array} \right]$$

P Rule 20 operates with alternating forms, being the equivalent of a morphophonemic rule which deletes a morpheme-final morphophoneme |Y|. Example 77(a) illustrates P Rule 20 and example (b), which manifests a morpheme-final y on the surface is justification for the postulated underlying 'y' which is deleted in example (a).

77(a). /rahoy - m/ [¹řagom] 'posts'
post - 3PL

(b). /rahoy - e - t/ [¹řagoyet] 'It is a post.'
post - COP - 3SF

The semi-vowel [y] is phonetically syllabic according to P Rule 21.

P Rule 21

$$[Y] \rightarrow [+ \text{syllabic}] / [w] \text{---} V$$

P Rule 21 has been postulated to derive a surface form for completely abstract forms. The rule is not independently motivated, i.e., it does not operate on morphemes which manifest the underlying 'y' in one of their alternate forms. P Rule 21 derives the copulative form of 'dog' in example 78.

78. /yawy - e - t/ [¹yawlet] 'It is a dog.'
 dog - COP - 3SF

P Rule 21 is a plausible phonetic rule, but it is ultimately justified by justifying the underlying form of 'dog' (yawy). If yawy can be motivated as an underlying form of other manifestations of 'dog', it will be evidence to support the claim that the phonetically plausible P Rule 21 is operating on the same underlying form in example 78. This can, in fact, be done for the form in example 79.

79. /yawy - t/ [yawč] 'dog'
 dog - 3SF

The surface form in example 79 is derived by the independently motivated P Rule 5 (i.e., [y] + [+ alveolar] → [+ alveopalatal]). Further evidence for an underlying yawy for 'dog' is provided by the comparison of paradigms in examples 2, 3, and 4 (p. 34). It is clear from those forms that it is phonetically plausible to associate 'dog' with y-final morphemes and to derive the yawi form from an underlying yawy; it is not plausible, on the other hand, to associate 'dog' with i-final morphemes and to derive yaw(y) from yawi. It is of course possible to maintain two phonological unrelated allomorphs yaw(y) and yawi, but as long as a plausible phonetic relationship between them exists, it seems more natural, i.e., motivated, to derive one from the other rather than to relate them simply as morphologically conditioned allomorphs.

P Rule 21 results in a phonemic overlap between /i/ and /y/. Compare the following paradigm of /yawy/ 'dog' with a paradigm of the non-alternating /fawi/ 'river outlet':

[¹ yawi - ε - t]	:	[¹ pawi - ε - t]
'It is a dog.'		'It is a river outlet.'

¹An epenthetic [y] will not be inserted between vocoids in phonetic transcription unless it is pertinent to the discussion at hand.

[¹ yaw - { $\begin{smallmatrix} \text{y} \\ \text{x} \\ \text{c} \end{smallmatrix}$ }]	:	[¹ ɸawi - t]
'dog'		'river outlet'
[¹ ya ^o - m]	:	[¹ ɸawi - m]
'dogs'		'river outlets'

3) FUSION RULES

Considerable phonetic modification occurs by the interaction of central vowels and semi-vowels. This phenomenon is the basis of the more abstract three-vowel hypothesis which will be discussed as an alternative analysis in section d. (p. 71).

P Rule 22

$$[+y] \rightarrow [i] / \text{---} \left\{ \begin{array}{c} \text{V} \\ \left[\begin{array}{c} \text{C} \\ - \text{alveolar} \end{array} \right] \end{array} \right\}$$

By the interaction of this rule and P Rule 5, the [+y] sequence never occurs on the surface in Alamblak. The only environment in which the sequence [+y] is not fused is in the case where the y fuses with a following alveolar consonant (P Rule 5). The forms in example 80 will illustrate the validity of the underlying /iy/ sequence, however.

- 80(a). /miyt/ [¹mi{ $\begin{smallmatrix} \text{y} \\ \text{x} \\ \text{c} \end{smallmatrix}$ }] 'tree'
 (b). /miyet/ [¹miet] 'It is a tree.'
 (c). /miym/ [¹mim] 'trees'

P Rule 22 results in phonemic overlap with /i/; compare forms of /miy/ 'tree' (80) with those of /wi/ 'lorikeet' (81).

- 81(a). /wit/ [¹wit] 'lorikeet'
 (b). /wiet/ [¹wiet] 'it is a lorikeet'
 (c). /wim/ [¹wim] 'lorikeets'

P Rule 23

$$[ay] \rightarrow \left[\begin{array}{c} + \text{mid} \\ + \text{front} \end{array} \right] / \text{---} \left\{ \left[\begin{array}{c} \text{C} \\ - \text{alveolar} \end{array} \right] \right\}$$

##

Unlike the [ɨy] sequence, [ay] is manifested on the surface since [ay] does not fuse preceding a vowel.

- 82(a). /nunayt/ [ˈnuna $\left\{\begin{smallmatrix} \text{y} \\ \text{x} \end{smallmatrix}\right\}$] 'earthquake'
 (b). /nunaym/ [ˈnunɛm] 'earthquakes'
 (c). /nunayet/ [ˈnunayɛt] 'It is an earthquake.'
 (d). /hiŋnɔy - ø/ [ˈxɪŋɪnɛ] 'You worked.'
work.I.PST - 2S

P Rule 23 results in an underlying /ay/ phonemically overlapping with /e/ and /a/. /ay/ and /e/ are phonetically identical in the following pair of words:

- 83(a). /gay - m/ [ˈgɛm] 'white cockatoos'
white.cockatoo - 3PL
 (b). /bik - e - m/ [biˈkɛm] 'they are locusts'
locust- COP - 3PL

/ay/ and /a/ overlap in the forms in example 84.

- 84(a). /hay jubt/ [xaˈjubɪt] 'a child's bow of
iron.wood child's.bow ironwood'
 (b). /wuna jubt/ [ˈwuna ˈjubɪt]
(a kind of tree) child's.bow
'a child's bow of (wuna)'

The mid vocoids [ʌ] and [ɛ̃] are the inputs for rules 24 and 25.

P Rule 24

$$\left[\begin{array}{l} + \text{mid} \\ - \text{front} \\ - \text{round} \end{array} \right] + [\gamma] \rightarrow \begin{cases} [e] / \underline{\quad\quad\quad} \text{V} \\ \quad\quad\quad [- \text{stress}] \\ [i] / \text{elsewhere} \end{cases}$$

P Rule 24 specifies that [ʌγ] or [ɛ̃γ] fuse to a high front vocoid when manifesting the peak of a syllable (stressed or unstressed). Otherwise it becomes a mid front vocoid. VV-rule 1 (p. 85) will further specify the mid vocoid in this environment

If P Rule 23 precedes dissimilation an incorrect derivation results (example 90).

90. Step I (P Rule 23): *[a'gema]

Not only are certain rules ordered, but in some instances they must be applied in linear sequence, initially on the first syllable and then on the second syllable of the word, etc. as well. This constraint is necessary to insure the correct derivation of certain forms of /nayay/ 'come' as illustrated in example 91.

91. /nay'aym/ 'They came.'

Step Ia (P Rule 12): *[n_Δy'aym]

Step Ib (P Rule 24): *[n^e'aym]

Step IIa (P Rule 23): *[n^e'εm]

Step Ic (P Rule 9): [n_Δ'εm]

An incorrect derivation would result from initially applying rules to the second syllable, e.g.,

92. Step I (P Rule 23): *[nay'εm].

For paradigms showing phonetic variation in forms of |hay| 'give' and |nayay| 'come' the reader is referred to appendix A.

d. AN ALTERNATIVE ANALYSIS

As was mentioned in the last section, the present analysis postulates more than one origin for non-central vocoids. /i/, /e/, and /u/ are postulated as phonemes while some manifestations of [i], [e], [ε] and [u] are derived from fusions of underlying sequences. Rule 22, for example, is powerful enough to derive most surface high front vocoids ([i]) from an underlying /iy/. By an extension of the present synchronic analysis a more abstract analysis could be proposed without postulating any non-central vowels.

This 'three-central-vowel' hypothesis is not new for Sepik languages of Papua New Guinea. Don Laycock (1965), written in 1962, analysed the vowel systems of Abelam, Boiken, Iatmul, Manambu, Ngala, and Yelogu¹ as three-vowel systems. Soon thereafter Eunice Pike (1964) described Sepik languages in general as having a paucity of vowels with central vowels conditioned by palatalized and labialized consonants. She arrived at essentially the same analysis as did Laycock adding Mayo, a non-Ndu-family language, to the list of three-vowel languages.

In subsequent work Foreman and Martin (1973) postulated four vowels for Mayo (i, ʌ, a, ɔ). Staalsen (1966) verified the three-vowel system for Iatmul (i, ə, a) but has more recently added to the inventory (cf. Staalsen, 1972). The three central vowels conditioned by palatals and /w/ still account for most non-central vocoids in these languages as they do in Alamblak.

Bahinemo is another Sepik Hill language which shows evidence of non-central vocoids deriving from central vowels. In Bahinemo (Dye and Dye 1965) [e] and [ɛ] occur as allophones with [ʌ] (among others) when preceding and following /y/ respectively.

The abstract three-vowel analysis for Alamblak follows the same pattern as did the abstract analysis of the alveopalatals. Since some front and back vocoids can be shown to derive from an underlying sequence of central vowel plus [y] or [w] the pattern can be extended to account for all non-central vocoids. In the case of /i/, P Rule 22 has been motivated by independent concrete evidence which could account for occurrences of [i] in almost all environments. Gaps in the distribution of semi-vowel /w/ could provide evidence to analyse [o] as a fusion of underlying /aw/ which occurs only in restricted environments. Such a powerful analysis is difficult to control, however, and the number of alternate grammars which could be derived by allowing abstract forms in non-alternating morphemes seemingly could not be

¹These are languages of the Ndu Family, a group of languages which are distantly related to Alamblak.

objectively evaluated. Indeed, it is not at all clear how certain manifestations of [i] which occur preceding alveolar consonants could be derived from an underlying /iy/. Rule 21 specifies that [iy] cannot fuse to [i] in that environment. Forms like [ˈmitat] 'death adder' and [biˈnamit] 'pandanus palm' are inexplicable with underlying forms like */miytat/, and */biynamt/. The sequence /iyt/ is regularly manifested as [i^ɣɰ] as in /miyt/ [ˈmi^ɣɰ] 'tree'. In such cases an underlying /yɰ/ sequence could be postulated. There is no synchronic evidence for such a solution although comparative evidence may show it to be a reconstructable historical origin of /i/ in some cases.

There is even more positive evidence against the abstract analysis even though it involves some completely abstract forms itself. A comparison of verb paradigms reveals that re-interpretation of some underlying sequences as underlying /i/ has already taken place. This re-interpretation tends to be extended in the speech of the younger lectal group (cf. section C.). The two paradigms of /hiŋgnay/ 'work' (Conj. II) in tables 7 and 8 illustrate the forms of regular Conj. II roots in the Immediate past and present tenses. Re-interpretations have apparently occurred in the verb root in tables 9 and 10.

Table 7: Immediate Past Tense Paradigm (Conj. II)

	Singular	Dual	Plural
1	xingɰ ^l ni-a	xingɰ ^l na-ñĕ	xingɰ ^l na-ñĕm
2	_____ε-ϕ	_____ε-bin	_____e-kĕ
3 M	_____a-ŕ ^Y		
F	_____a-š	_____ε-p	_____ε-m

Table 8: Present Tense Paradigm (Conj. II)

	Singular	Dual	Plural
1	xingɬ ^l ni-w-a	xingɬ ^l ne-w-nĕ	xingɬ ^l ne-w-nĕm
2	_____e-w-n	_____e ^o -bɪn	_____e ^o -kĕ
3 M	_____e-w-Ř	_____e ^o -p	_____e ^o -m
F	_____e-w-t		

The root final /ay/ sequence is modified in both paradigms according to the phonological rules which have been discussed. We will now compare the regular forms in Tables 7 and 8 with the irregular paradigms in Table 9 and 10. /pithay/ 'talk', an irregular verb of Conj. II has the phonetic forms as shown in the two tables. The irregular forms are boxed in.

Table 9: Irregular Immediate Past Tense Paradigm

	Singular	Dual	Plural
1	piti ^l gi-a	piti ^l gi-nĕ	piti ^l gi-nĕm
2	_____i-ϕ	_____i-bɪn	_____i-kĕ
3 M	_____ε-Ř ^ŷ		
F	_____ε-š	_____ε-p	_____ε-m

Table 10: Irregular Present Tense Paradigm

	Singular	Dual	Plural
1	piti ^l gi-w-a	piti ^l gi-w-nĕ	piti ^l gi-w-nĕm
2	_____e-w-n	_____e ^o -bɪn	_____e ^o -kĕ
3 M	_____e-w-Ř		
F	_____e-w-t	_____e ^o -p	_____e ^o -m

A comparison of the paradigms for hiŋgnay and pithay reveals that the underlying form of the stem of pithay 'talk' has been re-interpreted in the first person dual and plural, second person, and third person singular forms for the immediate past and in the first person dual and plural forms in the present

tense. The boxed-in forms in the paradigms are the re-interpreted forms.

In Table 9 /ay/ has become phonetically [i] in the first and second persons (as it is in the 1S form by a regular phonological derivation) and [ɛ] in the third person singular (as it is in the 3D and PL. forms). Some possible influencing factors which may help explain the re-interpretations are 1) paradigmatic coherence (Kiparsky 1972:206-13), 2) the influence of the phonetic value on formulations of underlying forms (cf. Hale's discussion in Hale 1973), and 3) the rule change of the younger speakers whereby ay fuses into [ɛ] before alveopalatals as well as non-alveopalatals.

The first and second person forms (pithi) of the immediate past tense paradigm will concern us first. The first person singular form appears to be the model upon which the other stem forms are based. Since the first person singular form derives from the underlying phonemic form through at least two steps (*ay-a → *ʌy-a → i-a), it is presumably more susceptible to the pressure of phonetic-phonemic conformity. If the underlying form of the first person singular stem-final vowel is re-interpreted as /i/, then the other first person and second person stems become /i/-final by analogy.

The fact that the /iy/ sequence is never manifested as such phonetically, but always as [i] or [ɨ] plus [alveopalatal] means that /iy/ is a completely abstract underlying form. Although such abstract forms may legitimately exist synchronically for a while, there is certainly a strong tendency for such underlying forms to be reinterpreted in terms of their phonetic value.

There are two phonological reasons, therefore, for the first person singular form of /pithay-a/ 'I talked' to be re-interpreted (like the surface form) as /pithi-a/. The phonetic derivation from /ay/ to [i] is a complicated one and [i] is the manifestation of a highly abstract sequence /iy/ in many cases which presumably exerts an influence elsewhere for [i] to be interpreted as a phoneme.

In the third person singular forms on Table 9 [ɛ] has replaced the regular [a] (cf. Table 7). The alveopalatal [R̥^y]

and [š] have remained, however. The resultant forms may be described by removing from the phonology, P Rule 5 (fusion of y plus alveolar). With an underlying /pithayr/ P Rule 6 produces [piti'gayŕ^Y] and the [ay] sequence remains intact to fuse to [ε] according to P Rule 23.

A re-interpretation like this in the third person forms simplifies the phonology by removing one rule (5) and generalizing another (/y/ becomes available along with other alveo-palatals to act as a modifying environment for assimilation rule 6). This factor plus re-interpretations in the first and second person forms enhances paradigm coherency by helping to reduce stem variations from three to two different phonetic forms. This simplification in the paradigm, however, results in a complication in the grammar in general, as Kiparsky (1972: 207 ff) reports often happens. The verb must now be described with three allomorphs instead of two.¹ The final vowel of the allomorph [piti'gi] is no longer phonologically derived from an underlying form which is different from the surface forms. The front vowel /i/ must be afforded phonemic status at least in this verb and thus in the vowel system of Alamlak.

Other verbs clearly exhibit front vowels in some of their underlying forms varying with an /ay/ sequence in other forms, e.g., tone 'run' and hoe 'sleep' (irregular Conj. II, cf. p.228).

- 93(a). /tonay - ni - r/ [tona'niŕ] 'He ran and ran.'
 run - go - 3SM
- (b). /hoay - et - r - n/ [xoa'yetiŕin]
 sleep - POSSD - 3SM - G.SUB
 'He being asleep.'

The remote past tense form of the stem (tone-më-r) correlates with P Rule 23 where the ay has fused into [e]. The stem appears in unpredictable forms in other tenses, however, at least according to the phonological rules and conjugations

¹Previously there were two underlying forms: /pitha/ (R.PST, N.PST, FUT) ~ /pithay/ (I.PST, PR).
 The three forms now required are: /pitha/ (R.PST, N.PST, FUT) ~ /pithi/ ~ /pithe/ (I.PST, PR).

established thus far. Consider the third person singular masculine forms of tone 'run'.

remote past	to ¹ ne-m ^ˇ ë- ^ˇ R
near past	to ¹ ne-r ^ˇ ë- ^ˇ R
immediate past	to ¹ ni- ^ˇ R
present	to ¹ nit-wo- ^ˇ R
future	tone- ^ˇ ag-i ^ˇ R

The near past tense stem [tone] will not derive from an underlying /tonay/ which would give *[tona-^ˇYë-^ˇR] (compare: /hay-rë-r/ [¹xa-^ˇYë-^ˇR] give-N.PST-3SM). Underlying /tonëy/ gives an incorrect form as well: *[toni-^ˇë-^ˇR].

Immediate past, present and future forms are a problem, too. The immediate past 1S form toni-a is derivable with an underlying final /a/ or /ay/; the present form tonit-w-a is derivable with final /ay/. There is no way, however, to derive non-first-person forms with a final /a/ or /ay/ in the immediate past or present paradigms. Retention of underlying /tona/ ~ /tonay/ requires postulating a complete levelling of the forms in the immediate past and present tenses to /toni/, and to /tone/ in the near past. Even then the future forms remain irregular.

It is quite possible that such a levelling took place historically, or that the /tone/ form of the root in the near past may have been formed by analogy with the remote past tense form (/tonay-më/ [to¹nemë]). A next plausible step would then be to re-analyse the remote past form as /tone/ to conform to the near past and then to diphthongize the final vowel to give /toney/ for the immediate past and present tenses on the pattern of Conjugations II and IV (V(C) → Vy(C) in the immediate past and present tenses). Whatever the historical reconstruction might be the present state requires an underlying /e/ in some of the forms of 'run'.

Positive evidence has been presented for underlying front vowels in the synchronic phonology of Alamlak. Since the abstract analysis for deriving front vocoids (from central vowel plus y) cannot explain all of the present manifestations of front vocoids, the analysis for deriving back vowels from completely abstract underlying forms will not be given any further consideration here.

C. PHONOLOGICAL CHANGES OBSERVED

In the discussion in the last section some positive evidence was given for phonemic front vowels. Part of that evidence involved a historical re-interpretation of underlying forms to conform more to their surface phonetic form; the clearest example of this was with pithay 'talk' (cf. footnote on p. 76).

In this restricted case (with pithay 'talk'), the middle and older lectal group (thirty years of age and older) has restructured the immediate past and present tense paradigms by extension of the front vocoids [i] and [ε]. The extended forms with [i] can only be analysed as a re-interpretation of the final vowel replacing /ay/ with /i/.

The third person singular forms (cf. Table 9) may be analysed in two ways requiring either a change in the phonological rules or a change in the phoneme inventory. The older forms

/pithayr/ * $[piti^lgaR^y]$ 'he talked'

and

/pithayt/ * $[piti^lga\left\{\begin{smallmatrix} \check{y} \\ \check{c} \end{smallmatrix}\right\}]$ 'she talked'

have been replaced by the two forms

$[piti^lgeR^y]$

and

$[piti^lge\left\{\begin{smallmatrix} \check{y} \\ \check{c} \end{smallmatrix}\right\}]$.

These new forms may be analysed as roots having the form of /pithay/ or /pithe/.

If /pithay/ underlies these forms, then our present set of rules, minus P Rule 5 (p. 44) ([y] plus [alveolar] → [alveopalatal]) can derive the new surface forms, e.g.,

94. /pithayt/ 'she talked'

Step I (P Rule 6): * $[piti^lgay\left\{\begin{smallmatrix} \check{y} \\ \check{c} \end{smallmatrix}\right\}]$

Step II (P Rule 23): $[piti^lge\left\{\begin{smallmatrix} \check{y} \\ \check{c} \end{smallmatrix}\right\}]$

If /pithe/ is chosen as the underlying form, an alveopalatal vibrant /r^y/ has to be added to the phoneme inventory which becomes a part of the underlying form specified by phonetic realization rules of the phonemes without recourse to

Rule 6 or Rule 23.¹

95. /pɪther^Y/ [pɪtɪ^YgɛR^Y] 'He talked'

The former analysis is the change which the younger men's lectal group² (of about twenty to twenty-five years of age) have made in their phonological system. They have made the change a general change, whereas the adult group exhibit it in only exceptional cases. Elsewhere, in general, a small part of the phonological systems of the two lectal groups can be compared as follows:

Adult Speech

1. Fusion rule 5: [ɣ] + [+ alveolar] → [+ alveopalatal]
2. Assimilation rule 6: [+ alveolar] → [+ alveopalatal] /
[+ alveopalatal] _____
3. Fusion rule 23: [a] + [ɣ] → $\begin{bmatrix} + \text{mid} \\ + \text{front} \end{bmatrix}$ / _____ $\left\{ \begin{array}{l} [- \text{alveolar}] \\ \# \end{array} \right.$

Young Men's Speech

1. Assimilation rule 6: [+ alveolar] → [+ alveopalatal] /
[+ alveopalatal] _____
2. Fusion rule 23: [a] + [ɣ] → $\begin{bmatrix} + \text{mid} \\ + \text{front} \end{bmatrix}$ _____ $\left\{ \begin{array}{l} C \\ [- \text{alveolar}] \\ \# \end{array} \right.$

These contrasting sets of rules derive different surface forms for each group from the same underlying form.

¹A new phonological rule specifying [alveolar] → [alveopalatal] / [ɛ] _____ cannot be postulated since alveolars do follow [ɛ] elsewhere, e.g., /yëner/ [yëner] 'he is a child', /yënet/ [yënet] 'she is a child'.

²The social position of the young men is conducive to change in that they live together in a single-men's house from age twelve or fourteen until they get married. This somewhat-isolating situation helps changes to become established. The younger women are more strictly controlled in Alambak society, spending virtually all their time with their mothers and aunts; preliminary evidence suggests that their speech is more similar to adult norms than to the young men's speech.

96. /nunayt/ 'earthquake'

<u>Adult</u>	<u>Young Men</u>
I. (P Rule 5): ['nuna { $\begin{smallmatrix} \text{y} \\ \text{c} \end{smallmatrix}$ }]	I. (P Rule 6): * ['nunay { $\begin{smallmatrix} \text{x} \\ \text{c} \end{smallmatrix}$ }]
II. (P Rule 6): -----	II. (P Rule 23): ['nune { $\begin{smallmatrix} \text{y} \\ \text{c} \end{smallmatrix}$ }]
III. (P Rule 23): -----	

The fact that /nunayt/ underlies both lectal groups is evident from derivations of other forms of the word which produce the same surface form for both group, e.g., /nunayet/ ['nunayɛt] 'it is an earthquake'.

The change which has taken place in the speech of the younger lectal group can be described as simplification by the loss of fusion rule 5. This change has the effect of integrating the semi-vowel /y/ into the alveopalatal series allowing it to operate in P Rule 6 as any other alveopalatal. This in turn tends to firmly establish the alveopalatal series in the phonemic system. Secondly, the change generalizes the operation of P Rule 23 since P Rule 5 no longer bleeds P Rule 23 by reducing /y/'s in the environment [ay] [+ alveolar].

It is important to note here that the change described here for the younger lectal group only affects the forms of alternating morphemes. Morpheme-final low vowels preceding alveopalatals are front mid vowels in the younger group's speech. In morpheme-medial positions the same phonetic sequence remains unchanged (i.e., [a] + [+ alveopalatal] as in ['gajɪʃ] 'stool'). This differential treatment of what are phonetically identical sequences in adult speech is strong support for an analysis of the younger group's speech which includes a phonemic alveopalatal series as well as the neutralization of alveolars and alveopalatals in the environment of a palatal. The evidence is overwhelmingly against an abstract form for 'stool' which includes the sequence ayɔ which becomes [aj] by a phonological rule. Furthermore, if this change indicates a 'direction' to language change in Alambak, it provides secondary support for the proposed analysis of the adult consonantal system which includes phonemic alveopalatals.

A fluctuation of forms typically occurs during the time

that a phonological change is still in progress. Pithay 'talk' is one verb root which, having been subject to re-interpretation by the adult lectal group, fluctuates greatly among the young men's lectal group. Tables 11-15 compare the immediate past tense paradigm (in phonetic transcription) of pithay 'talk' for adult speakers and the speech of three young men.

Table 11: Adult Speech

	Singular	Dual	Plural
1	piti ^l gi-a	piti ^l gi-në	piti ^l gi-nëm
2	_____ i-ø	_____ i-bin	_____ i-kë
3 M	_____ ε-Ř ^Y		
F	_____ ε-š	_____ ε-p	_____ ε-m

Table 12: Young Men's Speech
(Mengumari age: 25 yrs in 1978)

	Singular	Dual	Plural
1	piti ^l gi-a	piti ^l gi-në	piti ^l ginëm
2	_____ i-ø	_____ i-bin	_____ i-kë
3 M	_____ i-Ř		
F	_____ i-t	_____ i-p	_____ i-m

Table 13: Young Men's Speech
(Bajur age: 18 yrs in 1978)

	Singular	Dual	Plural
1	piti ^l gi-a	piti ^l ge-në	piti ^l ge-nëm
2	_____ ε-ø	_____ ε-bin	_____ e-kë
3 M	_____ ε-Ř ^Y		
F	_____ ε-š	_____ ε-p	_____ e-kë

Table 14: Young Men's Speech
(Ginab age: 25 yrs in 1978)

	Singular	Dual	Plural
1	piti ^l gi-a	piti ^l ge-ñë	piti ^l ge-ñëm
2	_____ε-ϕ	_____ε-bin	_____e-kë
3 M	_____ε-ŕ ^y		
F	_____ε-š	_____ε-p	_____ε-m

All of the paradigms of young men's speech differ from adult speech (differences are indicated by the blocked-in areas), as well as differing from each other. Mengumari (Table 12) has generalized the [i]-final form throughout. Bajur (Table 13) and Ginab (Table 14) have generalized the [e]-final form to every form except the first person singular. Bajur, however, has not derived the [e] from /ay/ in the first person dual and plural forms as Ginab apparently has since his person suffixes have initial alveolars whereas Ginab's have alveopalatals indicating an underlying /ay/.

Ginab's speech has been observed over a period of eight years.¹ During that time earlier re-interpretations of the major, second conjugation forms have returned to the adult norm in terms of underlying forms with the retention of the phonological change in rules indicated earlier for young adult speakers. With the extension of the underlying /pithay/ form for 'talk', he has regularized what is an irregular verb in adult speech to fit his pattern for conjugation two roots.

In 1970 Kathleen Bruce recorded the following immediate past tense paradigm illustrative of all other /ay/-final root verbs (Conjugation II) for the younger lectal group (Bruce and Bruce 1971). Her teacher was Ginab, and the underlying forms are /hiŋgni/ ~ /hiŋgnay/ 'work'.

¹He was married in 1974 and fully integrated into adult society by 1977, having returned with his wife and two children to the Alamlak area after an extended absence.

Table 15: /hiNgni/ ~ /hiNgnay/ 'work' I.PST
(Ginab age: 17 in 1970)

	Singular	Dual	Plural
1	xingɨ ^l ni-a	xingɨ ^l ni-nĕ	xingɨ ^l ni-nĕm
2	_____ ε-∅	_____ ε-bɨn	_____ e-kĕ
3 M	_____ ε-ŕ ^y	_____ ε-p	_____ ε-m

Eight years later the extension of the first person singular form to first person dual and plural forms has been dropped from Ginab's speech. He now employs one underlying form which is the same as the adult speech (/hiNgnay/). With the dropping of the Fusion rule 5, however, the surface forms of the root still appear in two forms rather than the three in adult speech (his earlier solution accomplished the same reduction in surface alternations). Present-day adult forms in Table 5 are repeated here as Table 16 for convenient comparison with Ginab's present-day forms in Table 17.

Table 16: Adult Speech /hiNgnay/ 'work' I.PST

	Singular	Dual	Plural
1	xingɨ ^l ni-a	xingɨ ^l na-nĕ	xingɨ ^l na-nĕm
2	_____ ε-∅	_____ ε-bɨn	_____ e-kĕ
3 M	_____ a-ŕ ^y	_____ ε-p	_____ ε-m
F	_____ a- $\left\{ \begin{array}{l} \text{ŕ} \\ \text{ĉ} \end{array} \right\}$		

Table 17: /hiNgnay/ 'work' I.PST
(Ginab: age 25 in 1978)

	Singular	Dual	Plural
1	xingɨ ^l ni-a	xingɨ ^l ne-nĕ	xingɨ ^l ne-nĕm
2	_____ ε-∅	_____ ε-bɨn	_____ e-kĕ
3 M	_____ ε-ŕ ^y	_____ ε-p	_____ ε-m
F	_____ ε- $\left\{ \begin{array}{l} \text{ŕ} \\ \text{ĉ} \end{array} \right\}$		

This section on phonological changes does not form a part of a larger body of data from extensive research on the topic. While some interesting data on the subject of phonological change is provided here, this section is included primarily for illustrative reasons to demonstrate how re-interpretations on the part of the older lectal group (which have created phonemic front vowels) have been carried on and extended by the younger lectal group. Considerable fluctuation still occurs but there is considerable pressure for front vocoids to be interpreted as phonemic. This means that if a three-central-vowel system did exist historically, the phonological system supporting it, which has been simplified by adult speakers in places, has been simplified even more by younger speakers and that process seems likely to continue. It has also tended to confirm the phonemic significance of the surface contrasts of alveolars and alveo-palatal consonants in non-alternating forms, as mentioned on p. 80.

D. PHONOTACTICS

1. VOWEL SEQUENCES

P Rule 18 describes the insertion of an epenthetic [y] between disallowed vowel sequences. By that rule, underlying sequences of identical vowels, and sequences of a non-back vowel plus a vowel of lower articulation than the first vowel are all separated by the epenthetic [y]. Of the remaining possible thirty-two two-vowel sequences, ten have been observed as actually occurring. One additional sequence occurs only with an epenthetic [y] and another as a complex syllable nucleus as exceptions to P Rule 18, (i.e., [uye] and [^ea]). Table 18 summarizes the observed vowel sequences. The shaded area indicates sequences that are disallowed by P Rule 18.

Table 18: Two-vowel Sequences

		Following Vowel						
		i	e	ɨ	ë	a	u	o
Preceding Vowel	i			-			-	
	e	-		-	✓	✓	-	-
	ɨ	-					-	
	ë	-	✓	-			-	-
	a	✓	✓	-	-		-	-
	u	✓	uye	-	-	✓		✓
	o	✓	✓	-	-	✓	✓	

A sample of vowel sequences are given in 97.

- 97(a). /barë - e - t/ [ˈbaʁëɛt] 'It is a pillow.'
pillow- COP - 3SF
- (b). /nuat/ [ˈnuat] 'fried sago'
- (c). /kakthoant/ [kaktiˈgoant] 'I pulled it out.'

The nucleus of a syllable is manifested either by a single vocoid or a sequence of non-syllabic and syllabic vocoid. Vowels in underlying sequences are pronounced non-syllabic as described by vv-rules one to three.

vv-rule 1

$$\left[\begin{array}{l} + \text{ mid} \\ - \text{ central} \end{array} \right] \rightarrow [- \text{ syllabic}] / \left[\begin{array}{c} \text{V} \\ \text{---} \\ [- \text{ stress}] \end{array} \right]$$

The first vv-rule produces phonetic sequences such as [ᵉa], [ᵒi], [ᵒe] and [ᵒa], as illustrated in 98.

- 98(a). /teamt/ [tᵉˈamɨt] 'coconut palm'

98(b). /hoaymäa/ 'I slept'

- Step I (P Rule 23) ·*[xoemäa]
 Step II (vv-rule 1) *[x^oemäa]
 Step III (P Rule 18) *[x^oemäya]
 Step IV (P Rule 24) *[x^oemea]
 Step V (vv-rule 1) [x^oem^ea]

vv-rule 2

$$\begin{bmatrix} + \text{mid} \\ - \text{fr} \\ - \text{rnd} \end{bmatrix} \rightarrow [- \text{syllabic}] / \begin{bmatrix} \text{V} \\ + \text{stress} \end{bmatrix} \text{ —}$$

The second vv-rule produces phonetic sequences such as [^oU[^]] and [^oe[^]], as illustrated in 99.

99. /teahat/ 'coconut'

- Step I (P Rule 12) *['te_hgat]
 Step II (vv-rule 2) ['te^hgat]

vv-rule 3

$$\begin{bmatrix} + \text{hi} \\ + \text{fr} \end{bmatrix} \rightarrow [- \text{syllabic}] / \begin{bmatrix} \text{V} \\ + \text{stress} \end{bmatrix} \text{ —}$$

The third vv-rule results in phonemic overlap with y. This rule is necessary, nonetheless, to derive certain phonetic manifestations of the verb yi 'go'. The proposed underlying form of the verb 'go' may be justified by comparing some of its alternating forms, e.g.,

100(a). /yi-më - r/ ['yimεŘ] 'He went.'
 go-R.PST- 3SM

(b). /wa -i -ø/ ['waⁱ] ~ ['we] 'go!'
 IMPER-go-2S

(c). /rim - i - ak - n - t/ [řimi'yakɪnt]
 ELEV- go- get- 2S- 3SF
 'You went (and) got it in a level movement.'

If 'go' were interpreted as an underlying /y/ in example (b), as it occurs phonetically, there would be no way to naturally derive the syllabic form in example (c) since [y] occurs in an

analogous environment e.g., [dam¹yagi^YŔ] 'teenage boy'.

Overlap with underlying /y/ occurs when, such as in 100(b), an underlying /ai/, which becomes phonetically [aⁱ], undergoes processes of fusion according to fusion rules P Rule 5 and P Rule 23. An underlying /i/ in 'go' is often differentiated from a /y/, however, even when the two are phonetically identical. Consider the following paradigm of present imperative forms of 'go'.

	SINGULAR	DUAL	PLURAL
1	/a- -i -a/ [ʼa ⁱ a]	/a-i-në/ [ʼa ⁱ ñë]	/a-i-nëm/ [ʼa ⁱ ñëm]
	HORT-go-1S		
2	/wa -i -ø/ [ʼwa ⁱ]	/wa-i-fɪn/ [ʼwa ⁱ βɪn]	/wa-i-kë/ [ʼwa ⁱ kë]
	IMPER-go-2S ~ [ʼwe]	~ [ʼwebɪn]	~ [ʼwekë]
3(M)	/a-i-r/ [ʼa ^Y Ŕ]		
(F)	/a-i-t/ [ʼa ⁱ ç]	/a-i-f/ [ʼa ⁱ ɸ]	/a-i-m/ [ʼa ⁱ m]

The verb root is non-syllabic in all of these forms which manifest the root on the surface. In the 3SM form the non-syllabic [i] has fused with the alveolar PNG marker according to P Rule 5 ([y] [+ alveolar] → [+ alveopalatal]). In other forms the non-syllabic [i] has palatalized the following consonant without fusing with it, i.e., 1D, 1PL, and 3F forms. Other cases fluctuate between fused and non-fused forms, e.g., the second person forms maintain the [aⁱ] configuration contrary to P Rule 23 in one form but fuse the sequence to [e] in accordance with P Rule 23 in the alternate form. The 3D and 3PL forms completely resist P Rule 23, and the first person singular form resists the application of P Rule 12. Most of these forms, therefore, actually contrast with an underlying /ay/ sequence because of their differential treatment by P Rules 5, 12 and 23.

The [aⁱ] sequences deriving from underlying /ay/ and /ai/ sequences are phonetically identical as evidenced by the fact that some surface forms in the above paradigm of 'go' are fully susceptible to the rules which operate on an underlying /ay/ sequence. Certain forms of words which involve the lexical root yi 'go' are simply exceptions to P Rules 5, 12 and 23. It is suggested that these exceptions to otherwise automatic phonological rules are due to the resistance against unacceptable

obscurity in forms which would result if the regular phonological processes were applied indiscriminately. In those forms of 'go' which have not blocked these P rules the verb root is completely obscured where it has fused with a juxtaposed phone.

No more than three vowels occur in a sequence. Clusters of three vowels are rare, but clear examples do occur.

101. /nua - e -t/ [¹nuaɛt] 'It is fried sago.'
 sago- COP-3SF

2. CONSONANT SEQUENCES

The consonant cluster (cc) rules presented in this section describe clusters which are allowable with no open transition¹ although an epenthetic [ɨ] may optionally separate the consonants of some of the clusters (cf. epenthesis rule 26 p.99).

cc-rule 1

Word initially a cluster of a voiceless obstruent plus a non-identical voiceless obstruent or /w/, and an optional voiceless obstruent or nasal may occur.

This rule can be represented diagrammatically as:

$$\# \quad C_1 \quad C_2 \quad (C)_3$$

$$\left[\begin{array}{l} - \text{voiced} \\ + \text{obst} \end{array} \right] \left\{ \left[\begin{array}{l} - \text{voiced} \\ + \text{obst} \end{array} \right] \right\} \left\{ \left[\begin{array}{l} - \text{voiced} \\ + \text{obst} \end{array} \right] \right\}$$

$$\left[w \right] \left[+ \text{nasal} \right]$$

- 102(a). [¹p̥kogi̯R̥] 'bandicoot'
 (b). [¹t̥R̥ubi̯ki̯b̥ɛ̯t̥] 'to scatter'
 (c). [¹p̥R̥ti̯ka̯b̥aki̯ki̯b̥ɛ̯t̥] 'to place alongside'
 (d). [¹t̥k̥ma̯ki̯b̥ɛ̯t̥] 'to exclaim with a velar click'

Word medially (i.e., flanked by vocoids) two to four consonants occur in a cluster. These clusters are described in rules two - five.

¹Pike (1947:252) reserves the term open transition for a voiceless vocoid between voiceless consonants or a voiced central vocoid (weak) between voiced consonants. What is here referred to as open transition is always voiced whether occurring between voiceless or voiced consonants, or a voiceless and voiced consonant.

cc-rule 2

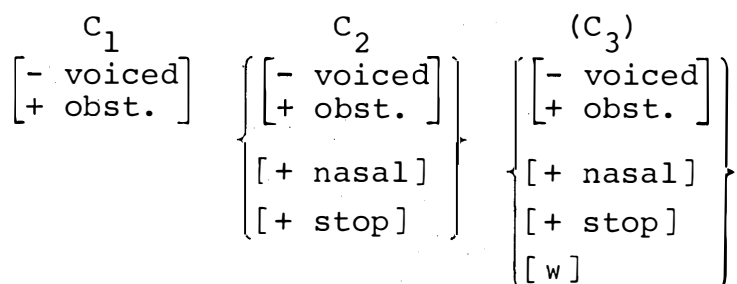
Any non-affricated or non-tapped consonant plus /w/ may cluster word medially.

103. ['kukwa] 'I am bathing'

cc-rule 3

A voiceless obstruent plus a voiceless obstruent, nasal, or stop, plus an optional voiceless obstruent, nasal, or stop, or /w/ may cluster word medially.

This rule can be represented diagrammatically as:



Condition: If C_2 is manifested by /f/ or /h/ then C_3 is restricted to a voiceless stop or /w/.

Peripheral fricatives are not permitted to cluster. Either an epenthetic [ɨ] separates them, or, in the case of /hh/ one segment may elide.

- 104(a). [ba^{x}_{y}_{c}]mambit] (*croton plant variety*)
 (b). [yakdi**i**'ka**β**i**k**i**β**ët] 'to hold together'
 (c). ['řipt**k**i**β**ët] 'to flatulate'

One case of four consonants in a cluster has been recorded:
 [yaktk'bët**k**^hk'i**β**ët] 'to get and mash up'.

cc-rule 4

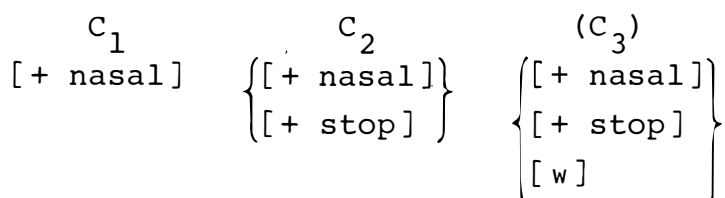
A voiced obstruent plus a voiced stop or nasal may cluster word medially.

- 105(a). [dab^ldu**g**i**n**] (*lineage name*)
 (b). [xikab^lmëřa] 'He followed (then) left me.'

cc-rule 5

A nasal plus nasal or stop and an optional nasal or stop or [w] may cluster word medially.

This rule can be represented diagrammatically as:



Condition: if C_2 is manifested by /f/ or /h/ then C_3 is restricted to a voiceless stop or /w/.

- 106(a). [tiɛ̃m^lnakib^{ɛ̃t}] 'to count'
 (b). [wɪn^ldɛ̃gɪt] 'song'
 (c). [ˈnʊŋɡwat] 'bird'

cc-rule 6

A vibrant plus voiceless stop or a voiceless stop plus a vibrant may cluster word medially.

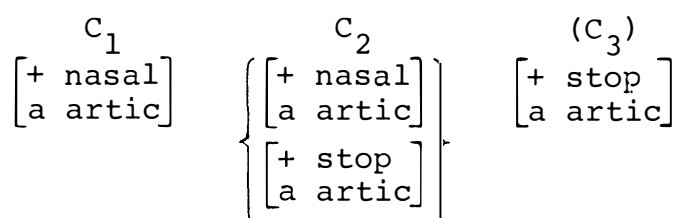
- 107(a). /morpam/ [ˈmo^vɾpam] 'muddy water'
 (b). /tekrit-/ [te^vk^ɾɪt] 'chew into'

Word finally two or three consonants may cluster. These clusters are described in rules seven to nine.

cc-rule 7

A nasal plus a homorganic nasal or stop and an optional homorganic stop may cluster word finally.

This rule can be represented diagrammatically as:



- 108(a). [ˈyɛnt] 'child'
 (b). [waˈgaɲ^ñɲ] ~ [waˈgaɲi^ñɲ] 'take it'

cc-rule 8

A bilabial fricative plus bilabial nasal may cluster word finally.

109. /nefm/ [ˈnɛb̥m] 'customs'

cc-rule 9

A vibrant plus a coronal stop may cluster word finally.

110. [ˈaʁ̥t] 'this one'

The above statements of allowable consonant clusters are predictive of what appear to be structurally permissible. That is, in most cases the rules are extrapolations of patterns which emerge from attested clusters in the data. Some of the clusters predicted by these rules have not been attested presumably due to arbitrary distributional gaps. Furthermore, it is assumed that other unattested clusters would come to light by an examination of a larger corpus of data.

According to cc-rules three, four, five, and seven, identical stops, nasals or coronal fricatives may cluster. Geminate phones occur when this happens. Of the possible geminates only the following have been observed: k:, b: (from /bb/ and /fb/), š:, m:, and ñ: (cf. example 1 on Table 20, and examples 13(c) and 14(c)).

3. SYLLABLE STRUCTURE

The syllable is not easy to define in many cases for Alambak. Some notion of syllable has been appealed to in certain areas, particularly in the stress rule (cf. section E.1), as well as in the relationship that exists between consonant clusters, the epenthetic vocoid and syllable boundaries. The stress rule requires the identification of syllable nuclei, and consonant phonotactics seem to be sensitive to syllable boundaries.

In the section on vowel sequences, the nucleus of a syllable was described as being manifested by either a single vocoid or

a sequence of a non-syllabic and a syllabic vocoid. Absolute length of vocoids does not define a syllable nucleus. Any vocoid flanked by consonants or pause is considered to be the peak of a syllable; a sequence of vocoids of different length, form a complex nucleus; a sequence of vocoids of approximately equal length and relatively long duration manifests a sequence of syllable nuclei equal to the number of vocoids in the sequence.

The boundaries between syllables become difficult to identify if not indeterminate when three or four consonants occur between two syllable nuclei. Wherever a syllable boundary has been used in the phonological description in this chapter, however, it has been a clearly definable boundary. The clearest boundary points are these:

1. between a vocoid and a single consonant plus a vocoid
2. between two consonants flanked by vocoids.

Extensive research was not carried out in this study to determine syllable boundaries where more complicated sequences of consonants were involved. From what little native speaker reaction that was observed, however, the following preliminary statements seem likely:

3. A consonant plus semi-vowel or vibrant form a complex onset of a syllable peak.
4. The syllable boundary comes between the first and second consonant of a cluster of three or four consonants.

Complex syllable onsets were most noticeable when native speakers were requested to speak individual words at an artificially slow rate. The future tense complex -rhw was consistently kept together in the same syllable even when an open syllable preceded, e.g., hiNgnarhwa 'I will work' is pronounced [xiŋ.gɪ'nal.ɹiŋwa] (a dot on the line (.) indicates syllable boundaries manifested by length on the preceding segment or pause in artificially slow speech).

The way words are segmented in artificially slow speech does not necessarily correspond to syllable boundaries as defined by the four statements above. For our purposes, each interconsonantal vocoid is counted as a syllable peak. At one level (as in slow speech) all of the epenthetic vocoids in a word may not be reacted to as the peak of a separate unit, but

it will be claimed (p. 97) that in stress patterns each vocoid must be counted as the peak of some kind of unit which we have termed here the syllable. Pike (1967:373ff) distinguishes between etic and emic syllables and such a distinction may be relevant here. If that is so, only the etic (i.e., phonetic) syllables are relevant in this description of Alambak phonology.

There are three basic syllable patterns:

- 1) c(c) (c)v(c) (c)
- 2) v(c) (c)
- 3) cvv(c)

These basic patterns and their variations are illustrated in Table 19.

Table 19: Syllable Types

Word Position	Initial	Medial	Final
Syllable Types			
c(c) (c)v(c) (c)			
cccv	^l tkmakibēt 'to make a velar click'		
ccv	skunētikiβēt 'to singe'		wa ^l šuxtwa 'fall!'
cv	^l watit 'hand drum'	^l bakoet 'it is a (shell)'	^l ka ^l di 'quiet!'
cccvc		yak ^l tkbētikiβēt 'to get and mash'	
ccvc	^l kRæñjipam 'white clay'		^l nungwaŘ 'bird'
cvc	nox ^l tiwant 'I plant it'	mugi ^l Řpam ^l 'crocodile meat'	^l watit 'hand drum'
ccvcc			wa ^l ga ⁱ ñšwant 'take it'
cvcc	kuñč 'house'		^l kipi ^l Řt 'grass'
v(c) (c)			
v	^a wi 'wait'		indi ^l tio 'that there'
vc	^a Řtiko 'this there'	agi ^l ankë 'let me give you'	Řipaet 'it is one'
vcc	^l a ^l Řt 'this (one)'		
cvv(c)			
cvv	^l te [^] gat 'coconut'		
cvvc			šiba ^l mo ^ë t 'delicious'

E. THE HIGH CENTRAL VOCOID [ɨ]

The analysis of the vowels includes a high central vowel /ɨ/. Some manifestations of the high central vocoid, however, must be interpreted as epenthetic. This section will outline the procedures used to distinguish [ɨ] which is epenthetic from its manifestation of underlying /ɨ/.

A phonetically short high to mid central vocoid poses a common problem for the analysis of many languages of the Sepik area of Papua New Guinea and in other areas of the country as well. In general the problem confronts linguists studying languages in all parts of the world.

Andrew Pawley has analysed all manifestations of the Kalam¹ transition-like vocoid as epenthetic (Pawley 1966: sections 3.5 and 3.6.). He does this by postulating a morpheme juncture phoneme between consonants, which makes the epenthetic vocoid predictable. (This is just one of several motivating factors which led to setting up the juncture phoneme). One of his strongest single arguments is that a phonemic schwa (or higher central vocoid) would require /ə/-final allomorphs alternating with consonant-final allomorphs for most morphemes in the language. Don Laycock refers to it as a non-phonemic "linking schwa" in Abelam (Laycock 1965:44).

Margaret Langdon has dealt with a similar problem in Diegueño, an Amerindian language in Southern California. While her analysis comes close to eliminating /ə/ from the phoneme inventory, she retains /ə/ for some manifestations of [ə].

The /ə/ phoneme is unique among Diegueño vowels. She states, "/ə/ is the one phoneme which is always unstressed, never long, and accounts for all cases of unstressed vowels whose quality is either [ə] or is predictable from its environment" (Langdon 1970:37).

¹Kalam (formerly Karam) is closely related to other languages of the East New Guinea Highlands Stock (Wurm 1975c:486). Kalam, with other Kalam Family languages, has presented classification difficulties due to its "mixed composition". Wurm (1975c:486) citing work by Biggs, Pawley, and Laycock, describes Kalam phonology as essentially of the Sepik-Ramu Phylum type having three vowels and a non-phonemic schwa which predictably separates consonant clusters.

1. PHONEMIC /ɨ/

In this section, we will attempt to distinguish underlying /ɨ/ from the optional epenthetic [ɨ] in Alamblak. Contrastive /ɨ/ will be identified by demonstrating in certain words the obligatory presence of /ɨ/ between consonants which occur as a cluster with or without an optional epenthetic [ɨ] between them in another word or words. Alamblak consonant phonotactics have been examined in II.D.2. to identify clusters whose component contours are allowable with no open transition. Examples demonstrating a contrastive /ɨ/ in analogous environments are presented in Table 20.

Examples illustrating contrastive /ɨ/ have been chosen carefully. Only those cases have been cited where there is a high degree of certainty that the [ɨ] obligatorily occurs (not freely varying with close transition). Examples of clear contrast are given first in which [ɨ] intervenes between two consonants which occur as a cluster in an analogous environment in another word. Secondly, examples are cited in which the [ɨ] occurs in cases where the cluster rules hypothetically allow a cluster although no case of that particular cluster has been documented.

The examples in Table 20 illustrate contrastive /ɨ/ in most positions. There are no examples, however, of contrastive /ɨ/ occurring between the last two consonants of nouns. If the stem ends in a consonant, [ɨ] always precedes the person-number-gender suffix (a single consonant) unless the stem-final consonant and the consonant suffix form an allowable cluster (per cc-rules 6-8) in which case [ɨ] never occurs between them.

Table 20

Close Transition	vs.	/i/
cc-rule 1.		
a. [tki ¹ bət ¹ kkibət] 'to mash up'	a ¹ .	[ti ¹ ket] 'it is a (kind of tree)'
b. [p ¹ to ¹ toaet] 'it is light-weight' unattested tp	b ¹ .	[p ¹ ito ¹ ni ¹ ŕ] 'he ran'
	c ¹ .	[ti ¹ p ¹ it] 'bone'
cc-rule 2.		
d. [wa ¹ šwo ¹ ŕt] 'he is spearing it'	d ¹ .	[m ¹ əsi ¹ wi ¹ ŕt] 'garden'
cc-rule 3.		
e. [buki ¹ ko] 'to the headwaters'	e ¹ .	[p ¹ itiko] 'where to?'
f. [kaki ¹ giri ¹ ŕt] 'he restrained her'	f ¹ .	[dibi ¹ tukinam] 'they bumped (themselves)'
g. [i ¹ joxtoney ¹ etit] 'she is sexually promiscuous' unattested tp unattested krp	g ¹ .	[p ¹ äg ¹ itim] 'pig lineage'
	h ¹ .	[k ¹ embi ¹ ŕuti ¹ p ¹ it] 'policeman (lit: rodent bone)'
	i ¹ .	[ki ¹ ñ ¹ ki ¹ ŕipam] 'black rain cloud'
cc-rule 4.		
j. [gi ¹ ŕibi ¹ nak ^u t] (sago palm var.)	j ¹ .	[dibu ¹ bi ¹ nagi ¹ ŕt] 'he shot it'
cc-rule 5.		
k. [xem ¹ ni ¹ m ¹ k ¹ ë] 'we gave to you (pl.)'	k ¹ .	[xemi ¹ k ¹ ëmit] 'you (pl.) gave to her'
l. [yi ¹ fami ¹ maf] 'parents' ~ [yi ¹ fam:af]	l ¹ .	[dukami ¹ miwa] 'I don't recall'
cc-rule 6.		
m. unattested n:	m ¹ .	[ni ¹ ni ¹ n] 'you (Sg. EMP)'

Having established, in principle, the existence of a contrastive high central vowel /ɨ/, we shall now consider the nature of the vowel within the Alambalak vowel system.

First of all, the high central vowel /ɨ/ is distinct from the other vowels with respect to stress-placement which we will now consider. Stress placement is determined by phonetic syllables (whether or not they are present in underlying forms).¹

The following stress placement rules are applied in order until the structural description of one of the rules is satisfied and (primary) stress is assigned to a syllable of the unit in question.

S Rule 1

The first non-high-central vocoid preceding the last phonetic syllable of the last polysyllabic morpheme in the word is stressed. (A [ɨ] preceding a person-number-gender marker is counted as the peak of the last syllable of the preceding morpheme).

S Rule 2

The only non-high-central vocoid in the word is stressed.

S Rule 3

The first vocoid of the word is stressed.

Examples illustrating the stress placement rule are given in 111-113 below.

S Rule 1

- 111(a). [bi¹danɨm] (*shell type* (pl.))
 (b). [¹bidant] (*shell type* (sg.))
 (c). [xe¹mëtɨbɨn] '*she gave to you* (dl.)'
 (d). /bidan-e-t/ [¹bidanɨt] '*It is a (shell type).*'
 (e). /hiŋgna-kɨfët/ [xɨŋgɨ¹nakɨbët] '*to work*'

¹The interaction of word stress and the rhythm and stress patterns over a long segment of speech has not been analysed here, nor has the phenomenon of secondary word stress which occurs on the first or second syllable of longer phonological words (i.e., grammatical phrase bases and phrases).

S Rule 2

- 112(a). [kɨ'pat] 'sago frond stem'
 (b). [kɨpɨ'met] 'It is a sago carrying basket.'

S Rule 3

113. ['kɨpɨmit] 'sago carrying basket'

With respect to stress placement, then, the high central vowel is unique among the other vowels.

Secondly, the high central vowel (/ɨ/) is unique according to the dissimilation rule 12. According to that rule all vocoids with the exception of [ɨ] will block the operation of P Rule 12 if they intervene between two syllables containing [a]'s (cf. p. 59). The operation of P Rule 12 is illustrated in 114 and 115. The basic form of the future irrealis suffix is /-rhwat/ as seen in example 114(a).

- 114(a). /hi -rhwat-fin-r/ [xɨ'ɣwatɨbɨnɨR]¹
 give-FUT.IRR-2D -3SM
 'You (two) will (not) give to him.'
 (b). /hi -rhwat-fin-a/ [xɨ'ɣwɔtɨbɨna]
 give-FUT.IRR-2D -1S
 'You (two) will (not) give to me.'

The [a] in the future tense morpheme in 114(b) is raised to [ʌ] (and is backed and rounded by the [w]) by the dissimilation process caused by the following first person singular morpheme /-a/. The dissimilation process is not contravened by the intervening high central vocoids even though one of them derives from an underlying /ɨ/ phoneme. Other intervening vowels will cancel the dissimilation rule, however. Consider, for example, 115 below.

¹/hi/ 'give' is an irregular conjugation I verb. Its allomorphs are described in Table 62 p.228).

- 115(a). /hiŋgna-ni-rah-r/ [xiŋgiŋani¹ʔagi^ʔŋ]
work -go-FUT-3SM
'He will work (and) go.'
- (b). /hiŋgna-rah-r/ [xiŋgiŋa¹ʔagi^ʔŋ]
work -FUT-3SM
'He will work.'

The high central vowel /ɨ/ is again unique among the other vowels.

2. EPENTHETIC [ɨ]

As was mentioned earlier (cf. p.94) one of Pawley's arguments for his analysis of the non-phonemic schwa in Kalam is that it avoids postulating /ə/-final allomorphs alternating with consonant-final allomorphs for most morphemes in the language. A similar argument is valid for Alamblak where a word which is consonant-final preceding pause will be manifested with a transitional vocoid [ɨ] when it precedes a consonant initial word. Compare the forms in 116.

- 116(a). [¹yɛni^ʔŋ] '*child*'
 (b). [ki¹bɛ¹gatɛ] '*having said*'
 (c). [¹yɛni^ʔɨ ki¹bɛ¹gatɛ] '*The child having said ...*'

The high central vocoid [ɨ] after [yɛni^ʔŋ] '*child*' is interpreted as epenthetic under these circumstances.

In section D (p. 88) nine consonant cluster rules were discussed which describe allowable clusters of consonants which may occur with no epenthetic vocoid (open transition) separating them. In some cases (cc-rules 8 and 9) the clusters must occur without any such open transition. An epenthesis rule can be stated in conjunction with the consonant cluster rules although it would be cumbersome to formalize.

P Rule 26

An epenthetic high central vocoid [ɨ] is inserted between an underlying clusters of consonants which do not meet the structural descriptions of consonant cluster rules one to nine. The epenthetic vocoid may be optionally inserted between

consonants of underlying clusters which meet the structural descriptions of cc rules one to seven except in the case of the cluster [Cw] which cannot be separated by an epenthetic vocoid.

Taken together, the cc-rules and P Rule 26 will predict the occurrences of the epenthetic vocoid. The examples in 117 and 118 illustrate variations in pronunciation when clusters which obligatorily manifest open transition in one position in the word no longer manifest the open transition when in complex words the cluster occurs across a syllable boundary. The consonants nt and tn in the (a) examples in 117 and 118 are not allowable clusters word initially according to cc rule 1; as such they must occur with the epenthetic [ɨ] between them. When those same clusters occur across a syllable boundary ((b) forms) they meet the structural requirements of allowable clusters according to cc rules 3 and 5 and may cluster with or without the transition vocoid.¹

- 117(a). /ntakfët/ [nɨ¹takɨbët] 'to pulverize'
 (b). /naku -nta -kfët/ [naku {n't }akɨbët]
 sago palm-pulverize-INF {nɨ't }
 'to sago-pulverize'
- 118(a). /tnda-kfët/ [tɨn¹dakɨbët] 'to weave'
 (b). /kɨpa -tnda -t/ [kɨ¹pa {tn }dat]
 sago frond stem-weave-3SF {tɨn }
 'woven panel'

Note examples h¹ and j¹ in Table 20 which demonstrate phonemic /ɨ/ where the syllable boundary does not elide the vowel between allowable clusters tp and bn.

¹Examples from Au, A Sepik language which is unrelated to Alambak, illustrate the same phenomenon.

- 119(a). k^h-at^hɨn 'he-squeeze off'
 (b). k^h-at^hn-u k^h 'he-squeeze off-it'

The Au language is a Torricelli Phylum language spoken in the West Sepik Province of Papua New Guinea. The examples were supplied by David P. Scorza of the Summer Institute of Linguistics.

The conclusion was reached on page that contrastive /i/ never occurs noun-stem finally because [i] is never manifested between a stem-final consonant and a single consonant suffix if the resulting cluster is allowed by cc rules 7, 8 and 9. There are many nouns which cannot be directly tested by cc rules 7-9 since their stem-final consonants cannot form an allowable final cluster with any of the third person suffixes (-r, -t, -f, -m). In these cases [i] must always occur between the consonants. It would seem that there is no way of deciding whether these vocoids are all epenthetic or if indeed some are underlying vowels.

There is some supporting evidence for the original conclusion (which was based on the failure of contrastive /i/ to occur stem finally in all nouns where it could be tested for). The pairs of nouns in Table 21 demonstrate that an epenthetic vocoid separating two consonants which are not allowed to cluster word finally (per cc rules 7-9) will not occur when those same consonants are separated by a vowel morpheme. The final citation exemplifies noun stems with final vowels, none of which elide next to the copulative suffix /-e/. We would expect the [i] to elide, however, if the vocoid were merely epenthetic, since it would have no transitional function to perform where a vowel already occurs between two consonants. This test of the epenthetic vocoid is similar to that illustrated in examples 117 and 118 where a syllable boundary between certain consonants provides a transition between them making a transitional vocoid unnecessary.

Table 21

Non-derived Forms		Derived Forms	
a.	'bikim 'locusts'	a'.	bi'kem 'they are locusts'
b.	'tikit 'platform'	b'.	'tiket 'it is a platform'
c.	'yamit 'moon'	c'.	'yamet 'it is the moon'
d.	'barët 'pillow'	d'.	'barëet 'it is a pillow'

3. VOWEL-LESS WORDS

We now turn to the question of interpreting the status of [ɨ] in words which contain [ɨ] and no other vowel.

Up to five consonants occur in words with only high central vocoids. Allowable consonant clusters also occur.

- 119(a). [mɨnt] (*croton plant variety*)
 (b). [ˈbɨkɨt] 'locust'
 (c). [ˈɨʀɨpɨt] 'spoon'
 (d). [ˈtɨŋgɨt] 'mouth'
 (e). [ˈdɨgɨnt] 'wet'
 (f). [ˈtɨmdɨt] 'breast of a bird'
 (g). [ˈtɨndɨgɨʀ] (*a type of ancestor spirit*)
 (h). [ˈmɨmbɨʀt] 'palm sheath plate; boat'

Several such words occur with [ɨ] separating consonants which form clusters in other words.

- 120(a). [ˈkɨpɨmɨt] 'basket tree'
 (b). [ˈxɨʀɨkɨt] 'hook fish trap'
 (c). [ˈnɨbɨtɨt] (*seed of wild flower variety*)
 (d). [ˈñɨgɨtɨt] 'to weave, plait (a grass mat)'

We will conclude from the previous discussion that all stem-final [ɨ]'s are nonphonemic. If that is true, then the clusters in 119(d) and (f) occur across the boundary of two syllables the second of which, at least, is a phonetic syllable. We will conclude from this that like stress placement rules which are sensitive to all phonetic syllables, so too consonant cluster rules must be sensitive to phonetic syllables. For the purposes of determining allowable clusters, then the ŋg and md sequences in 119(d) and (f) are considered to occur word medially. If that were not so, then those two examples would violate the cc rules which allow those consonants to cluster word medially only.

If the cc rules are sensitive to phonetic syllables, then the middle two consonants in the examples in 120 should be allowed to cluster without an epenthetic [ɨ] between them.

The examples in 121 and 122, furthermore, illustrate that the same consonants as those under examination in 120 do occur as clusters without open transition in analogous environments (flanked by [ɨ]). 120(a) and (b) are repeated here for convenient comparison with 121 and 122.

120(a). [ˈkɨpɨmɨt] 'basket tree'

121. [ˈpɛ̃ɣɨpmɨt] (a kind of tree)

120(b). [ˈxɨɣɨkɨt] 'hook fish trap'

122. [ˈyagɨrkɨmim] 'enemies'

Since the cc rules allow the middle two consonants in 120 to cluster medially and there are contrastive examples (121 and 122) where pm and rk do actually cluster without a transition vocoid, we conclude that the second [ɨ] in the examples in 120 are phonemic.

The procedure we have been applying to the analysis of [ɨ] is basically Pike's procedure of interpreting suspicious patterns by analogy to non-suspicious or predominant patterns (Pike 1947:128ff). In this case we have determined our non-suspicious consonant clusters (those occurring with close transition). With these patterns as the standard, consonants which should be allowable clusters but which are obligatorily separated by a [ɨ] must be interpreted as non-clusters, and the intervening vocoid interpreted as a phonemic vowel.

The interpretation of noun-stem-final [ɨ]'s followed essentially the same principle. The pattern established by those words which were testable according to cc rules for word final position was extended to all nouns. Accordingly, no noun was analysed as having a /ɨ/-final stem.

It is possible to test individual morphemes more directly by our consonant cluster test, in the case of words containing non-allowed initial or final clusters which would be allowed to cluster medially. By morphological modification the clusters in question are manipulated into a medial position which allows

the transition vocoid to be tested. If under those conditions the high central vocoid persists it is interpreted as phonemic in all forms of the morpheme; if it fluctuates with close transition it is interpreted as epenthetic.

For example, the pt of $k\dot{p}\dot{t}$ 'sago carrying basket' is not an allowable cluster finally. The suffix $-ko$ 'allative' may be suffixed to the stem, however, to test the second $[\dot{t}]$ since pk is a possible cluster at a syllable boundary. When this is done $[k\dot{p}ko]$ 'to the basket' results. Since the $[\dot{t}]$ does not appear at the syllable boundary the second vocoid in $k\dot{p}\dot{t}$ is interpreted as epenthetic. In this way the previous generalization about all noun-stem final $[\dot{t}]$'s can be directly verified. In other examples, the $[\dot{t}]$'s in $[n\dot{t}a]$ 'pulverize' and $[t\dot{n}da]$ 'weave' do not occur at a syllable boundary in morphologically complex constructions (cf. examples 117 and 118 p.100). Therefore they are interpreted as nonphonemic (i.e., $/nta/$ 'pulverize', $/tnda/$ 'weave').

$[k\dot{r}\dot{t}]$ 'peeling' could be suspicious; even though kr is an allowable initial cluster, the intervening $[\dot{t}]$ is the only vocoid in the word. To test it further the copulative suffix can be added which yields the form $[k\dot{r}\dot{t}\dot{\epsilon}t]$ 'it is a peeling'. Since the vocoid remains between k and r which would be allowed to cluster word initially (cc rule 1) it is analysed as a phonemic $[\dot{t}]$. The underlying form is therefore $/k\dot{r}t/$ 'peeling'.

Many $[\dot{t}]$'s cannot be directly tested even by this type of morphological manipulation, namely those which occur between consonants which are not allowed to cluster in any position in the word. The first two vocoids in $[d\dot{g}\dot{m}\dot{r}]$ (water fowl variety), for example, must remain indeterminate. According to the present description these vocoids are predictable and thus need not be written in underlying forms. A word like this one could be written as a vowel-less word, i.e., $/dhmr/$ (water fowl variety). The correct surface form with epenthetic vocoids can be derived by our phonological rules since none of the consonant sequences in this word are allowable clusters.

To postulate vowel-less words on the basis of predictability from formal rules is not in itself conclusive. All suspect vowel-less words which can be analysed by our consonant cluster

test prove to have at least one phonemic vowel. According to the principle of interpreting suspicious patterns in terms of non-suspicious or testable patterns the evidence suggests that even a word like /dhmr/ (*water fowl variety*) contains at least one phonemic vowel. (Deciding which vocoid is phonemic or if they both are or not would still remain arbitrary).

Theoretically the question of vowel-less words has been debated for some time. Vowel-less words have been reported for the Salishan languages of the west coast of North America, particularly Bella Coola (Newman 1947), Lendu of the Central Sudanic languages (Greenberg 1962), Kabardian (Kuipers 1960) and Kalam of Papua New Guinea (Pawley 1966).

Kuipers has not been able to convince everyone that Kabardian lacks a vowel-consonant dichotomy (cf. Pittman 1963 and Halle 1970). Hockett (1955:57) accepts the Bella Coola analysis by Newman, making allowances for vowel-less onset type syllables in his *Handbook of Phonology*. Pike (1967:419), on the other hand, is somewhat uncertain of the Bella Coola analysis. Greenberg (1962) challenges the traditional Bella Coola analysis suggesting that syllabic frictional continuants in some syllables maintain the vowel-consonant dichotomy in Bella Coola as they do also in Lendu and, as Olson (1967) reports, in Chipaya of Bolivia.

If all predictable [ɨ]'s were analysed as nonphonemic transition vocoids in Alamlak without a constraint of having a minimum of one phonemic vowel in each word, then vowel-less words would occur in Alamlak as well. Some of these would be composed entirely of stop Phonemes e.g., /bkt/ [^hbɨkɨt] '*locust*'. It would be difficult to interpret any of the stops in /bkt/ as a syllabic segment forming the peak of the syllable and thus the vowel-consonant dichotomy would be seriously challenged (but only at the underlying level of representation). Even though some indeterminacies still remain, this analysis favours not allowing vowel-less words. The reasons for this conclusion are that allowing vowel-less words does not simplify the phoneme inventory, and all words which can be tested by presently worked out methods prove to have at least one underlying vowel; other words are interpreted as following the same pattern.

4. THE THREE-CENTRAL-VOWEL HYPOTHESIS AS A POSSIBLE RECONSTRUCTION

The indeterminacies in many areas of Alamblak phonology can be explained by viewing the system as a whole and the ways in which it has been changing. A model which seems to account for the present Alamblak system the best is described as follows: In a proto-, or perhaps pre-Alamblak system a three-vowel system (ɨ, ə, a) operated with stringent restrictions on vowel clusters (perhaps no vowel clusters at all as appears to be the case now with Ndu languages). Vowels were separated by semivowels (or semivowels and glottal stop as in the case of Ndu languages). Semivowels modified central vowels producing front and back allophones. In some cases the central vowel and semi-vowel fused whereby apparently independent (unconditioned) front (and back) vocoids were produced. In cases where non-central vocoids resulted from a relatively abstract underlying form through complicated phonological rules, the final phonetic output was re-interpreted as the underlying form. In some cases morphemes with this new vowel served as a model for re-interpretations of other underlying forms. In this way front (and back) vowels became a part of the vowel inventory. With a five- or seven-vowel system, vowel clusters then occurred and consonant clusters were highly restricted (as appears to be the case in Sumariup, a neighbouring language to Alamblak, where close transition in Alamblak seems to correspond to a [ɨ] in Sumariup).

As modifications and fusions involving central vowels (especially /ɨ/) were re-interpreted as non-central vowels the functional load of the central vowels decreased. The most tenuous vowel (/ɨ/), being phonetically very short, began to be phased out of the system. Thereupon allowable consonant clusters occurred with or without the intervening [ɨ] with factors of timing and emphasis affecting their manifestations. The remaining /ɨ/'s became a weak vowel in the system with respect to stress rules and susceptibility to elision next to other vowels and between consonants which could cluster. This appears to be the present status of the Alamblak system. Kalam (Pawley: 1966) may represent a later stage with completely predictable transition vocoids in a three vowel system with both vowel and consonant clusters moderately restricted. (Whether or not Kalam can be compared

historically with Sepik phonologies is a matter of debate.)

Sepik vowel systems are undergoing a general influence which may add to the tendency toward similar developments in many Sepik languages. The influence is that of New Guinea Pidgin which is spoken throughout the Sepik area. Its vowel system consists of primarily front and back vowels (i, e, u, o) as well as central /a/. The influence of Pidgin English is undoubtedly a factor which gives added impetus to tendencies to phonemicize non-central vowels.

If such a model is a valid approximation of the general situation, then it serves as an explanation for the difficulty in determining the status of the high central vocoid in many instances in Alamblak. It is simply losing ground in Alamblak phonology. As such it is contrastive only to a limited extent. In some cases /i/ is distinctive in a word where it contrasts with close transition in analogous position in another word; in all environments it is the lowest ranked of syllable peaks with respect to stress placement. Noun-stem-finally it appears to have become regarded as an unnecessary redundancy and therefore elides next to vowels and between certain consonants.


F. INTONATION¹

Only a few of the more important and basic intonational patterns will be mentioned here. These include patterns of statements, yes-no questions, and sentence medial subordinating (i.e., "suspensive") patterns.

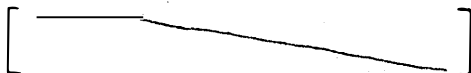
Bolinger (1978), in his cross-linguistic study of intonation, has made some general observations, some stated as universals and others as strong tendencies. In the most general terms a rising intonation indicates not being finished and a falling intonation indicates being finished. These general patterns hold true for Alamblak.

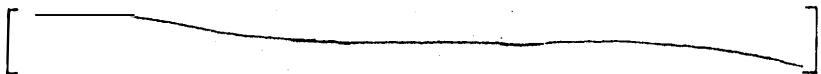
Bolinger observes that utterance-final statements, commands, and

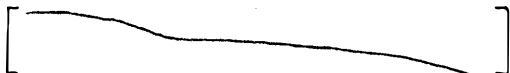
¹For a definition of intonation we will follow Bolinger's (1978:474) quotation of Woo (1972:21) "Intonation covers those significant uses of fundamental pitch that are not associated with particular formatives, whether of lexical tone...or of tone harmony."

Wh questions (all expressing assertiveness) tend to manifest the same intonation which is usually either a downglide within a nuclear syllable of relatively high pitch "or a downskip to the immediately following syllable" (Bolinger 1978:492). Secondly, he notes that "non-final clause terminals" and yes-no questions tend to have the same intonation, which is usually his second universal type of rising intonation. A third common type has a medial downward obtrusion [] which indicates antiassertiveness or downtoning.

In accordance with Bolinger's findings, utterance-final statements, commands, and content (Wh) questions in Alambak manifest the falling intonational pattern. This pattern manifests a gradually falling pitch to a low pitch on the final syllable.

123(a). []
 nanho yimatr nayayr.
my friend has.come

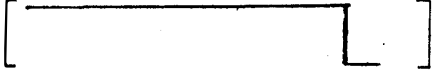
(b). []
 ni yëntoanmpnë wanayatwakë.
you with.children.and.wives come!

(c). []
 ni frëhmpnë nayay
you with.whom have.you.come?


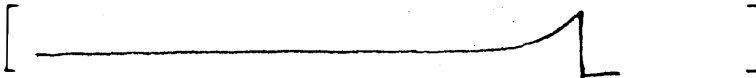
Bolinger associates a pattern of a downskip following a nuclear syllable of high pitch, with the falling intonation pattern as a variant termination of it. Alambak, by contrast, has such a downskip to a sustained level low pitch as the termination of the neutral yes-no question¹ or as a variant termination of the rising, subordinating intonation. As Bolinger

¹A neutral yes-no question carries no implications of incredulity on the part of the speaker as to the possibility of an affirmative response. The neutral pattern contrasts with the marked yes-no question in 127.

predicts, though, the suspensive and yes-no question forms share a common intonational pattern. The neutral yes-no question intonation sustains a high level pitch terminated by the downskip to a low level pitch as in 124.

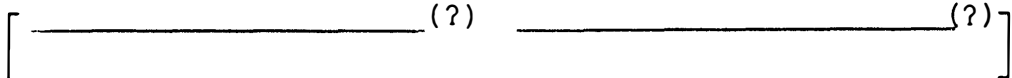

124. 
 ni dibha fukn
you morning did you bathe?

The sentence-medial or co-ordinate phrase-medial suspensive intonation is a rising pattern with an optional downskip (depending upon the presence of a clause-final vowel to carry the low tone).

- 125(a). 
 nanho yimatt nayaywt^(h)
(If/when) my friend comes,
- (b). 
 nanho yimatr nayaywrne (:(?))
(If/when) my friend comes,

Certain phonetic features of segmental phonemes may be associated with the closure of this subordinating intonation. Vowels may be lengthened with an optional glottal closure and stops may manifest heavy aspiration (as indicated in examples 125(a) and (b)).

Another sentence-medial "suspensive" pattern is a sustained level pitch also with an optional glottal closure. This pattern is common in a series or listing of items.

126. 
 taro dbha nohtaya, gënmt hrayf nohtaywa,
taro morning I.planted banana today I.am.planting
- 
 maspam yhof nohtarhwa
sweet.potato tomorrow I.will.plant

Bolinger's third pattern which is characterized by a medial downward obtrusion is characteristic of the marked yes-no question in Alamblak which implies incredulity on the part of the speaker.

127. []

ni dbha fukn

you morning did.you.bathe?

(implication: *'I doubt that you bathed this morning'*).

Chapter III

NON-VERBAL WORD CLASSES

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Chapter III

NON-VERBAL WORD CLASSES

A. INTRODUCTION

In this chapter we will first of all outline the word classes of Alamblak. Secondly, the non-verbal classes will be described in their basic unexpanded form. Morpho-syntactic criteria will be used to distinguish twelve major word classes not including verbs. The internal morphological structure used to identify the word classes will be discussed more fully in Chapter four where questions of grammatical levels (i.e., stem, word, phrase) and their definitions will be considered. The discussion there on grammatical levels will refine the discussion in this chapter so that the basic grammatical categories elaborated here will be referred to as roots rather than words.

B. WORD CLASSES

Formal word classes in Alamblak are identified by morpho-syntactic criteria. That is, basic root forms are classed together according to their potential to host certain bound morphemes. The word classes and subclasses are summarized in Table 22.

Inflectable roots (i.e., words) are distinguished from non-inflectable roots (i.e., particles). Adverbs contrast with all other word classes by their restriction from hosting the Copula and Elevational markers. Next, the verb classes can be distinguished from non-verbals. The internal structure which is unique to verbs (e.g., tense, aspect, mood, etc.) will be discussed in Chapter five. Non-verbals may be inflected with Possessive and Emphatic affixes, the Modifier enclitic -sk '*deteriorated*', and the Specific Setting case marker, and they may be conjoined by the co-ordinate conjunction (cf. line three in Table 22).

Other subclassifications are possible. Adjectives and some verbs are similar in that they host the Process Derivational -tay (Table 22 line four). The deictic-like pronouns, adjectives, personal names, and kin terms of address contrast with nominals

and verbs by not hosting the Possessed suffix -et which may occur with nominals and verbs (line six). Adverbs are similar to the non-inflectable Particle class in that they may occur as free forms in the clause. As it will become clear in Chapter Four, however, words in all other classes must be inflected when occurring as a minimal exponent of a clause-level slot.

Table 22: Word Classes

P N G markers	Particles		Words										
	+												
Elevationals	-		ADV	Nominal - Verbals									
Copula /-e/	-		-	+									
cf. Ch.V for verbal features	-		-	Non-verbal								Verbal	
Possessive Emphatic	-		-	-								+	
Clitic Mod. /-sk/	-		-	+								-	
Co-or. conj.	-		-	-								-	
S.Setting /-n/	-		-	-								-	
Process der. /-tay/	-		-	PRON	ADJ	Prop.N	Nominal					(-)	
Vocative /-ai/	-		-	-	(+)	Kin.add.	(-)					(-)	
Possessed /-et/	-		-	-	-	+	-					-	
Nonpossessed /-dohra/	-		-	-	-	-	‡					‡	
							Noun	Kin.	QUANT	DEM	Time	Locative	
							INTERR		Numeral				
Kinship suffix /-em/	-	-	-	-	-	-	(2)	+	-	-	-	-	-
Proximity /-a/, /-u/	-	-	-	-	-	-	-	-	-	+	-	(1)	(1)
Adessive /-kor/	-	-	-	+	-	-	(-)	-	+	+	-	+	-
Path /-oha/	-	-	-	-	-	-	(-)	-	+	+	-	+	-
Comitative /-pnë/	-	-	+	+	+	+	+	+	+	+	-	-	-
Adessive Referent /-pnë/	-	-	+	+	+	+	+	+	+	+	-	+	-
Allative Referent /-pnë/	-	-	+	+	+	+	(-)	+	+	+	-	-	-
General Setting /nanë/	-	+	-	-	-	-	-	-	-	-	+	+	-
Allative /ko/	-	-	-	+	-	-	(-)	-	+	+	-	+	-
Instrument /-e/	-	-	-	-	-	-	(-)	-	+	+	-	-	-

- (+) indicates that most of the members of the class host the suffix.
- (1) indicates that one member of the class hosts the suffix.
- (-) indicates that most of the members of the class do not host the suffix.

C. NON-VERBAL WORD CLASSES1. PRONOUNS

Pronouns are distinguished as a class essentially negatively according to affixes they cannot host (cf. especially lines 4-6 in Table 22). There are two sets of pronouns: Personal Pronouns (Tables 23 and 24) and the Emphatic/Reflexive Pronoun (cf. Table 25).

The traditionally unified paradigm of personal pronouns has been divided into two in Tables 23 and 24. The reasons for making this distinction are discussed in section IV.D.2.

Table 23: Direct Reference (Personal) Pronouns

	<u>Singular</u>	<u>Dual</u>	<u>Plural</u>
1	na(n) ¹	në(n)	nëm
2	ni(n)	nifin	nikë(m)

According to Table 22, pronouns host Person-Number-Gender markers as do all nominal and verbal words. According to the discussion of Pronoun Phrase constructions, however, (section IV.D.2) the pronoun roots in Table 23 occur in isolation without Person-Number-Gender markers. They do host the PNG suffixes in copulative constructions, however.

Table 24: Indirect Reference (3rd Person) Pronouns

<u>Singular</u>	<u>Dual</u>	<u>Plural</u>	<u>analysable allomorph</u>
rër (M)	rëf	rëm	rë
rët (F)			

¹A morphemic rule specifies that final nasals of the 1S, 1D, 2S, and 2PL forms of pronouns and pronominal affixes reduce phrase-finally.

The allomorph *rë* occurs in the nucleus of a Copular verb. The roots *rër*, *rët*, *rëf*, and *rëm* occur in other constructions and in isolation, without hosting Person-Number-Gender suffixes.

The free-form Emphatic/Reflexive Pronouns (inflected for person, number, and gender) are listed in Table 25. The uninflected forms of the root are *tuki* (in simple, first-person-singular forms) and *tu* elsewhere.

Table 25: Free-form Emphatic/Reflexive (E/R) Pronouns

	<u>Singular</u>	<u>Dual</u>	<u>Plural</u>
1	<i>tuki-a(n)</i>	<i>tu-në(n)</i>	<i>tu-nëm</i>
2	<i>tu-(n)</i>	<i>tu-fin</i>	<i>tu-kë(m)</i>
3	<i>tu-r (M)</i> <i>tu-t (F)</i>	<i>tu-f</i>	<i>tu-m</i>

The allomorph *tuki* is manifested in first-person-singular forms only if no other base-level inflection (IV.C.2.g) is manifested before the terminating suffixes. For example, *tu* occurs in example 128 with suffixes preceding the first-person-singular suffix.

128. *tu - rpa - et - a*
E/R- LIM-POSSD-1S
'I and only I'

The E/R pronouns are emphatic pronouns which may be used in reflexive constructions as reflexive pronouns. The emphatic usage is illustrated in example 129(a). Examples (b) and (c) illustrate reflexive constructions, first without and then with the E/R Pronoun.

129(a). *yënr tur fëhm wiknayrm*
child E/R pig buy.he.them
'The child himself bought some pigs.'

(b). yënr fufmër
 child cut.he
 'A child cut himself.'

(c). yënr tur fufmër
 child E/R cut.he
 'A child cut himself.'

2. TERMS OF ADDRESS

Personal names and Kin Terms of Address form a single class of the basis of inflectability with the Vocative suffix.

3. daja - ai
 father-VOC

4(a). Ginafmah - r
 (Pr. name)-3SM

(b). Ginafmah - ai
 (Pr. name)-VOC

Kin Terms of Address must be distinguished from Kinship terms which cannot be inflected with the Vocative marker but can be possessed. Kin Terms of Address take the Vocative but cannot host the Possessed and Nonpossessed markers. In examples 5 and 6 the (a) forms are Kin Terms of Address and the (b) forms are Kinship terms.

5(a). daja - a
 father-VOC

(b). * yif - em - ai
 father-KIN-VOC

6(a). * daja - et
 father-POSSD

(b). yif - em - et
 father-KIN-POSSD

3. ADJECTIVES

A closed class of about forty-five adjectives is identifiable in Alambalak. Adjectives are defined as a word class by both positive and negative factors.

Adjectives are formally distinguished from nouns in that nouns may host the Nonpossessed markers -et/-dohra; basic adjectives do not host these markers.

For example, 7(a) is acceptable but (b) is unacceptable.

7(a). met - et yima - r 'a woman-having man'
 woman-POSSD man-3SM

(b). * bro - et yima - r
 big -POSSD person-3SM

Adjectives and verbs are not so neatly distinguished. A combination of features will be required to classify certain lexical items as either adjectives or verbs. Basically, adjectives may generally host a Process Derivational suffix -tay, whereas verbs (and nouns) generally do not.¹ Most verbs and adjectives may be distinguished on this basis. There are cases of overlap, however, where (a) some adjectives do not host -tay, (b) some verbs may host -tay, and (c) a few nouns may host -tay. These three categories will be discussed individually.

¹Research subsequent to that which provided materials for Dixon (1977) has altered a few minor facts and interpretations of other facts since the publication of that article. While nominals and adjectives may appear with the Copulative -e, nominals rarely function predicatively with the Process Derivational -tay (cf. Dixon 1977:51). The Process Derivational affix is given as -ti 'inchoative' in Dixon's article. Recent phonological analysis has identified -tay as the underlying form of the morpheme (cf. Chapter II). The gloss used in Dixon (1977) 'Inchoative' followed Chafe's (1970:122) usage as a process deriving from a state. The term 'inchoative' has been reserved in this work for another morpheme (cf. section V.B.2.) with a more traditional meaning 'the initiation of an action.'

Those adjectives which do not occur with *-tay* seem to express states for which there is no Process Derivative, *viz.*, *tirf* 'domesticated', *graf* 'wild (undomesticated)', *nfri* 'new', *yatk* 'old'. A process implies a relative scale; if the Alambalak react to the above two oppositions as complement (in a polarized opposition) rather than antonym oppositions (opposites on a relative scale) (cf. Lyons (1968:460-467)), then no relative scale is involved and a Process Derivational suffix would be inappropriate.

In terms of the Alambalak culture it is not difficult to view 'domesticated' and 'undomesticated' as complements. A domesticated pig is considered undomesticated when the owner relinquishes his rights of ownership by giving up hope of ever regularly exercising that right. In the case of a run-away pig, the pig did not become wild by some process, it was simply considered to be outside the sphere of being 'actively owned' by its former owner (as it were by a punctiliar act of declaration).

The new-old opposition is more difficult to explain. According to Lyons' discussion and Dixon (1977:32), the opposition involved here would seem to be one of antonymy (in the sense explained above). However, the pair has an aspect of complementarity as well. While one thing can be newer than another, the same thing cannot become newer than it used to be. Since becoming new is not a possible process, then it does not form an antonym pair with 'old' in the same sense that 'big' and 'small' do. It is undeniable that becoming old is a process, but that fact does not need comment since it is a universally predictable one-way process. The Alambalak do not speak of a process of aging; they do, however, perhaps more directly, specify aspects of aging as processes (e.g., *beb-tay* 'become decrepit, bad').

If aging as a process is a universal given, then perhaps even in English the formal construction '*to become old*' is used to make indirect reference to specific aspects of becoming old rather than being a transparent statement concerning the

process of aging. Statements such as "you haven't aged a bit since I saw you a year ago," and "he became an old man very soon after retiring" illustrate such a usage.

These four adjectives which do not host -tay are semantically restricted from taking the Process affix. They must be formally classified as adjectives by other distributional criteria. Though more restricted in distribution than other adjectives, where they do occur they form a substitution class with the other less-restricted adjectives. The four exceptional adjectives contrast with verbs since they do not co-occur with any of the many verbal affixes. They contrast with nouns by the criteria mentioned on page 118 (cf. the examples in 7).

Category (b) embraces verbs which may (like adjectives) host the Process affix -tay. When -tay is suffixed to a basic verb, however, its effect on the meaning is different than with adjectives. The suffix -tay occurs with state, process, and action verbs (cf. Chafe (1970)) with the effect of extending and/or exaggerating a process, e.g.,

8. sisfën - tay - w - r *'he is panting'*
 breathe-PROC-PR.IMPF-3SM

The semantic effect of the Process suffix on adjectives is to derive a process from a state without any extending or exaggerating effects, e.g.,

9. bro - tay - w - r *'he is getting big'*
 big- PROC-PR.IMPF-3SM

The correct translation is *'he is getting big,'* not *'he is getting bigger.'*

The crucial formal features distinguishing these verbs which take -tay from adjectives is simply that these verbs take verbal affixes, as any other verb does, without requiring the manifestation of -tay. Adjectives, on the other hand, do not exhibit this flexibility. No adjective may be inflected directly with verbal affixes. Either the verbaliser -tay or

a verbal or aspectual morpheme must intervene between an adjective morpheme and verbal suffixes.

The third category involves nouns which may host *-tay*. The nouns in this category are commonly associated with the process derivation, e.g., *kisfu* 'morning twilight', *kisp* 'dusk', and *tahiyt* 'stone'. They are distinguishable from adjectives in that they may manifest the head position of a noun phrase. They contrast with verbs in the same way that adjectives do.

10(a). *kisfu - tay - we - t*
 twilight-PROC-PR.IMPf-3SF
'It is becoming morning twilight (i.e., dawn).'

(b). *tahiy - ta - mē - t*
 stone-PROC-R.PST-3SF
'It became stone.'

Approximately forty-five adjectives can be identified according to the criteria used in the above discussion. The adjectives subdivide further into five subclasses. This subcategorisation involves collapsing two of Dixon's (1977:31) eight semantic classes of adjectives into one formal class (Age-Human Propensity).

Table 26: Subclasses of Adjectives

Adjective Subclasses	-tay Process Derivation	Within Noun Phrase	
		Pre-Head	Post-Head
Value	X	X	X (Pre-ferred)
Physical Property	X	X (Pre-ferred)	X
Dimension	X	X	X
Colour	X	X	(not observed)
Age-Human Propensity	---	X (Pre-ferred)	X

The minimal contrast between the Physical Property subclass and the Dimension subclass is difficult to quantify and may not merit such a fine-grained subcategorization.

4. NOUNS

The noun class is a subclass of the general class of possessable nominals (cf. Table 22). As such Nouns are morphologically distinguishable from Pronouns, Terms of Address, and Adjectives which are not possessable. Nouns are distinguished from other word classes on the basis of contrasting potentials of affixation and distribution. Most Nouns could be classified according to which gender suffix they host in semantically 'unmarked' situations. Such classification is not considered to reflect strict noun classes, however, since almost all nouns may host either gender suffix (masculine or feminine) in certain circumstances (cf. the discussion of gender suffixes in section IV.C.1.a).

5. INTERROGATIVES

Interrogatives may be considered as a subclass of nouns inasmuch as there are no contrastive morphological features between the two classes. Interrogatives are distinguishable from Nouns, however, by their distribution in Interrogative Clauses (cf. section VI.B.2), which contrast with Declarative Clauses on the basis of verb morphology. There are four primitive interrogatives:

fitëh	'which'
fiñji	'what (action)'
tamëh	'what (substantive)'
frëh	'who'

Other common interrogative expressions are derived from the four basic interrogatives as illustrated in Table 27. The four primitive terms head the columns. Parameters of derived meanings label the rows of the chart with illustrative expanded Interrogative Phrases at the intersections of the rows and columns.

Table 27: Complex Interrogative Expressions

	fitëh 'which'	fiñji 'what (act.)'	tamëh 'what (subs.)'	frëh 'who'
Simple Interrogative	fitëh ylmär 'which man?'	fiñji kfiwar 'what did he say?'	tamëh hIngnëfm 'what work?'	frëhm kfiwam 'who spoke?'
Time	fitëh yhar which day/time 'when?'		tamëh yhar what day/time 'when?'	
Location	fitëh-kor which-AD 'where?'		tamëh-kor what-AD 'where?'	frëhm-pnë who-REF/COM 'with/to whom?'
	fitëh-ko which-AL 'to where?'			
Instrumental	fitëh-e which-INS 'how?'		tamëh-e what-INS 'how?'	
Comparative	fitëh kindë which like 'like which?'	fiñji kañjë (-htet) what like 'how?'	tamëh kindë what like 'like what?'	frëh kindë who like 'like who?'
"Why" formations (cf. sec. IX.C.2 Purpose Clause)	fitëh-kor yihatë which-AD having.gone 'having gone where...?'	fiñji nay-t what to.do 'to do what?'	tamëh-(roh)-akt what-(GEN) to.get 'to get what?'	frëh-roh yakt who-GEN to.get 'to get whom?'
			tamëhm-pnë what-with 'why?'	
Copulative	fitëh-e-t which-COP-3SF 'which is it?'		tamëh(-tet)-e-t what(-?)-COP-3SF 'what is it?'	frëh-e-r who-COP-3SM 'who is he?'
Reduplications	fitëh fitëh 'which (among many)?'	fiñji fiñji 'how many?'	tamëh tamëhm 'what (among many)?'	frëh frëhm 'who (among many)?'
Possession	fitëhroht 'which's?'		tamëhroht 'what's?'	frëhroht 'whose?'

The reduplication process forms other derivatives as a morphological parameter but does not result in a common semantic modification of each base form. Thus, the reduplication of fiñji (fiñji fiñji) asks the question 'how many?' with reference to substantives rather than to actions.

There is some evidence to suggest that three primitive interrogative morphemes may be reconstructable historically: frëh 'who', fi 'what', and tamëh 'what'. Fitë(h) and fiñji still exhibit evidence as to their morphological composition.

In fitë(h), fi is identifiable as the Interrogative, and të seems relatable to the Existential verb (section V.D) as in të-r 'he is (somewhere)'. Due to the frequent presence of a final h (fitëh), të(h) may be relatable to tëh 'stand' rather than to të ('X is here/there') in most occurrences of the Interrogative. The main reason fi is not analysed as a morpheme synchronically is that fi does not occur with other morphemes such as yha 'time', (*fiyha-r), but fitë(h) is the basic morpheme e.g., fitë(h)yha-r 'which day'; fitëh-ko 'where to'.

Similarly, in fiñji 'what action' fi is again identifiable as the Interrogative 'what' and iñji is identifiable as the Comparative particle iñji 'like, as (in reference to an action)'

(e.g. iñji kfë - më - r 'He spoke like that.').
 thus talk-R.PST-3SM

So, fiñji kfë-më-r is 'like what (i.e., what) did he say?'

There are two reasons for considering fiñji as synchronically unanalysable.

1) It often occurs with another Comparative particle (kanjë), obligatorily with certain verbs:

e.g., fiñji kanjë hoaymër 'How did he sleep?'

Thus any comparative meaning which fiñji might have had at one time seems to be absent now. Fiñji kfëmër 'what did he say?'

asks for the actual words which were spoken rather than the manner in which they were spoken.

2) Fiñji may be reduplicated (fiñji fiñji) with the meaning of 'how many?', which seems to be even further removed from an assumed underlying meaning of 'like what action?'. Rather than postulating an elliptical construction or an underlying meaning such as 'like what continuous action of counting?', fiñji fiñji is analysed as a reduplication of a unitary morpheme fiñji 'what?'.
 .

6. DEMONSTRATIVE

The Demonstrative is a monosyllabic root †nd which is realized phonetically with open transition next to a consonant segment and commonly manifests a syllabic nasal i.e., [†nd] ~ [ŋd†].

The Demonstrative is distinguished from most other classes by its potential to host the Proximity markers as suffixes. Only one verb, the Existential verb tē, and one bound Locative word tēmbha 'place' may host Proximity markers as prefixes. The Proximity markers (a 'near', u 'far') manifest allomorphs -ar and -ur when occurring with the Demonstrative.

Table 28: Demonstrative Paradigm

	†nd	-ar	-ur
	DEM	'near'	'far'
3SM	†nd-r	†nd-ar-r	†nd-ur-r
3SF	†nd-t	†nd-ar-t	†nd-ur-t
3D	†nd-f	†nd-ar-f	†nd-ur-f
3PL	†nd-m	†nd-ar-m	†nd-ur-m

Synchronically there are fluctuating forms, as in example 12. At least two precipitating factors appear to have contributed to the elision of the Demonstrative root †nd in example 12(b). First of all, there is a semantic redundancy in the complex

forms which combine the Demonstrative and Proximity morphemes. The Proximity marker alone plus PNG marker implies all that is conveyed by the meaning of the Demonstrative. Secondly, the Proximity markers occur elsewhere word-initially (as prefixes rather than suffixes); this pattern at least supports, if not encourages, the loss of the preposed Demonstrative.

12 (a). $\text{ind} - \text{ar} - \text{m}$ 'these'

DEM-near-3PL

(b). $\text{ar} - \text{m}$ 'these'

DEM-3PL

.near

The Demonstrative combines with other formatives to form expressions which parallel the Interrogatives of Table 27.

Table 29: Complex Demonstrative Expressions

	ind 'demonstrative'
Simple Demonstrative	$\text{ind} - \text{ar} - \text{t}$ 'this' DEM -near-3SF
Time	$\text{ind} - \text{ar} - \text{yha} - \text{t}$ 'now' time
Location	$\text{ind} - \text{ar} - \text{kor} - \text{t}$ 'this place' AD
Instrumental	$\text{ind} - \text{ar} - \text{e}$ 'with this' INS
Comparative	$\text{ind} - \text{ar} - \text{htet}$ 'like this'
Copulative	$\text{ind} - \text{ar} - \text{e} - \text{t}$ 'it is this one' COP
Reduplications	$\text{ind} - \text{ind} - \text{m}$ 'those sorts'
Possession	$\text{ind} - \text{ar} - \text{r} - \text{ho} - \text{t}$ 'this one's' GEN

7. KINSHIP TERMS

Kinship Terms and one Interrogative word potentially host the Kinship marker. Kinship roots rarely occur without the Kinship marker, therefore a display of a minimal kinship stem construction is presented here in Table 30.

Table 30: Minimal Kinship Term Stem

functions	+ Core	+ Classifier
exponents	Kin Term root yimat 'friend' tamëh 'what (substantive)'	-em 'Kinship marker (KIN)'

notes: The Kinship marker (-em) must be further specified by a morphemic rule:

$$-em \rightarrow \begin{cases} -m & / \text{ë} \text{ ___} \\ em & / \text{elsewhere} \end{cases}$$

13(a). iñas - em - r 'father's sister's grandson'

Fa.Si.-KIN-3SM
Ch.So.

(b). tamëh - em - e - r 'What kin is he?'

what -KIN -COP-3SM

(c). yimat - em - r (a friend in a kinship role
e.g., 'a trading partner')

friend-KIN-3SM

The Classifier is indicated to be obligatory in the kinship stem described in Table 30. Kinship roots always occur with the Classifier, except in composite forms (cf. section IV.C.2.f.1)) such as the following:

14(a). yifa - m+ma - f 'parents'

father-mother-3D

- (b). najë - hfi - t *brothers'*
 old.sib.-kin.-3SF
 same.sex group

Yimat '*friend*' in example 13(c) is the one root which must be cross-classified as a noun and a kinship term. While the term is most commonly used as a noun (vs. a kinship term), it may be used as a kinship term to refer to any close friend who is considered to be a long term active participant of society in a particular location.¹

8. LOCATIVES

The Locative class is composed of bound roots and basic Positionals. The minimal Locative Base is illustrated in Table 31.² Locatives are distinguished from other classes by distributional potential in Noun Phrase constructions (cf. section VI.C.) and the set of affixes they host (cf. Table 22).

a. BOUND LOCATIVE ROOTS

Table 31: Minimal Locative Base

functions	+ Deictic	+ Head
exponents	proximity markers	-kor ' <i>adessive</i> '
	a- ' <i>near</i> '	-tembha ' <i>place</i> '
	u- ' <i>far</i> '	

L. Base

15. a - kor - t '*here*'
 near-AD-3SF

The bound root -kor occurs more widely as a case marker (cf. f section VI.C.1) in Relator-Related phrases.

¹ See Bruce (1974:172-178) for a discussion of Alamblak kinship terminology.

² Other locative constructions, the Locative Phrase and the Locative Complex Phrase, will be described in sections VI.C.1 and 3.

b. BASIC FREE-FORM POSITIONALS

The following list represents most of the basic Positional words in Alamblak.

yurak	'up, above, up in'
nɪndë	'away from'
wuri	'far away from'
kimb	'beside'
mana	'alongside'
mana mana	'each side'
mku	'other side' (literally 'portion')
yiro ~ yuro	'inside, under'
boha	'middle crossways'
dañ	'middle longways'
brbë	'near'
briha	'outside'
rfashi	'underneath'

The Positionals may manifest the nucleus of a Relator-Related Phrase (cf. section VI. C.) or the locative position of a Locative Phrase (cf. section VI.C.3.) identifying a particular spatial orientation of a clause participant or action of the clause participant to another object or place. They also manifest the locative position in the Locative-Complex construction (cf. section VI. C.1) which fills the nucleus position of a Relator-Related Phrase. A Positional word is illustrated in example 16(a) as a nucleus of a Relator-Related Phrase; in example (b) as the locative position in the Locative Phrase; and in example (c) as the locative position in the Locative-Complex construction which in turn manifests the nucleus of a Relator-Related Phrase.

		<u>G.Setting NP</u>
16(a).	warhon	boha - nanë
	be.seated	middle-G.SET
		'Be seated in the middle.'

- LOC PH
- REF NP
- (b). tikt - pnë yurak wahegirtwant
 platform-REF up hang.it
 'Hang it above the platform.'

- Allative NP
- Loc-complex PH
- (c). wai kuñ - kimb - ko
 go house- side - AL
 'Go to the side of the house.'

Other basic Positionals are restricted to occurring with specific items. They may occur in a Locative Complex Phrase. Since the Head noun, with reference to which the Positional word is specifying a particular orientation, is predictable, these Positionals may occur as the Head of a Relator-Related Phrase without specifying the Head noun.

1) POSITIONS UNIQUE TO ANIMATE BEINGS

ñiŋga - tik 'front' (literally 'face')

moŋg 'behind' (literally 'back')

2) POSITIONS UNIQUE TO HOUSES

bi 'front' (literally 'pointed or protruding object')

gur 'rear'

3) POSITIONS UNIQUE TO CANOES

rawof 'inside'

mëfha 'front' (literally 'head')

yifhi 'rear'

bufa 'side' (literally 'plank')

4) POSITION UNIQUE TO TREES

yinhi 'under'

5) POSITION WITH LARGE NATURAL OBJECTSbumung *'behind'*

Some of these Positionals also occur as common nouns, e.g.,

17. doh - t - ho bufa - t
 canoe-3SF-GEN plank-3SF
'the canoe's plank'

When they occur as Locative Positionals in locative constructions, however, they are used in an abstract sense. For example, doh-bufa-kor canoe-plank-at means *'beside the canoe'* not *'at the plank of the canoe'* in example 18.

18. doh - bufa - kor wahititwa
 canoe-plank-AD see
*'Look { beside the canoe.
 at the plank of the canoe. }'

Other common nouns which occur in an equivalent construction structurally do not have a similar extended metaphorical sense, e.g

19. yima - këkragina - kor - n
 man - rib cage - AD-S.SET
 { *'On a man's rib cage'* }
 { **'at the man's side'* }

9. TEMPORALS

Time words are distinguished as a class by their restricted distribution in Relator-Related Phrases. They only occur with Specific or General Setting case suffixes (cf. section VI.C.). There is a similarity here with adverbs: adverbs may host the General Setting case marker but no others. This formal similarity may be indicative of the similar clausal functions of Time Words and Adverbs (cf. section VI.B.).

a. BASIC TIME WORDS

Basic Time Words include partitions of a 24-hour period and more general time-reference words.

1) PARTITIONS OF THE DAY

dbha	'morning'
krif	'afternoon'
yifung	'night'

2) GENERAL TIME REFERENCE

yha	'day, time'
mar	'day, (literally 'sun')
hrayf [xɪ'ʔɛp]	'today'
yhof	'one day removed' (= 'yesterday, tomorrow')
yuananë	'two days removed'

Mar 'sun' also occurs as a noun. But unlike other nouns, it is also a temporal word by metaphorical extension and may host the General Setting case marker.

The Partition words may be incorporated into the verb nucleus (cf. the discussion on incorporation V.B.3.d.).

Two of the Time Words of more general scope do not occur in the General Setting Phrase (cf. section VI.C.5.), yha 'day' and yuananë 'two days removed'. Yuananë is analysed as a frozen form of the General Setting Phrase (yua-nanë) which cannot further host the General Setting marker -nanë. Alternatively it could be analysed as yua 'two days removed', which is only manifested as the Head of a General Setting Phrase.

b. TEMPORAL PHRASE

Certain other semantic notions of time reference are morpho-syntactically complex. These notions can be described as a syntactic construction, called here a Temporal Phrase Base. The Temporal Phrase Base will be discussed here with word classes since these constructions are comparable semantically to the basic lexical Time Words. The constructions are productive enough, however, to describe them morpho-syntactically.

Table 32: Minimal Temporal Phrase Base

functions	+ Head	+ Specifier
exponents	mar 'day'	kisfu 'twilight'
		kisp 'twilight'
	day-partition roots	mar 'day'
		dañ 'middle'

readings: Collocations of the exponents of the Head and Specifier functions are semantically restricted. The relative order of function slots may reverse in the case of mar-dañ ~ dañ-mar 'midday'.

- 20 (a). dbha-kisfu 'dawn'
 (b). dbha-mar 'morning'
 (c). mar-dañ 'midday'
 (d). krif-mar 'afternoon'
 (e). krif-kisp 'twilight'
 (f). yifung-kisp 'dusk'
 (g). yifung-dañ 'midnight'

10. NUMERALS

Numerals are formally very similar to Demonstratives and nouns. Distributionally and functionally they are most like the Demonstrative especially as they are used deictically in headless noun phrases. Ultimately they are distinguishable as a class on distributional grounds, being the only class of roots which occur in Numeral Phrase constructions (cf. section IV.C.2.c).

The Alamblak number system is a mixed binary-quinary-vigesimal system, based on the following primitive numbers:

rpa	'one'	
hos	'two'	
tir	'five'	(literally 'hand/arm')
wura	'five'	(literally 'foot/leg')
yima	'twenty'	(literally 'person')

Wura 'five' occurs only in expressions containing 'fifteen',
modulo 'twenty'

11. ADVERBS

Modal adverbs form part of the modal structure of the clause. In that function they may occur as the Head of a General Setting Phrase or they may occur as uninflected free forms. Many other adverbial notions are expressed only by aspectual morphemes within the verb nucleus (cf. section V.B.3.a.). The nine observed Modal adverbs are listed here by semantic categories.

a. FREQUENCY

wompam 'again'

b. RELATIVE TIME

dugo 'nearly, soon'

bi 'already'

yohre 'still'

c. SPEED

fɪndi 'quickly'

bumbri 'quickly'

nhofjē 'slowly, carefully'

d. MANNER

mēfrē 'vigorously'

masat 'very, much'

iñji 'thus'

A second class of adverbs could be termed Scaler¹ adverbs. They are distinct from Modal adverbs both morphologically and distributionally.

¹This term is taken from Fries (1970:75).

Scaler adverbs cannot host affixes and in that respect are more like Particles. Distributionally the Scaler adverbs modify adjectives in an Adjective Phrase (cf. section IV.C.2.e.).

This class of words is listed as a subclass of Adverbs, however, because *masat* 'very, much' is a member of both subclasses of adverbs. The other Scaler adverbs are semantically similar although more specifically restricted to specifying degrees of physical size.

<i>yinmot</i>	'moderately (of size only)'
<i>kashë</i>	'moderately (of size, only with 'large')'
<i>yinmayr</i>	'very (of size only with 'large')'
<i>masat</i>	'very, much'

12. PARTICLES

Particles are free-form clause-level roots. They form a distinct class from Adverbs in that they are not inflectable.

a. NEGATION PARTICLES

Negation Particles manifest the Negation function in Negative Clauses (cf. section VI.A.1.c.).

<i>fiñji</i>	'not (non-future)'
<i>afë</i>	'not (negative of uncertainty)'
<i>tafitë</i>	'not yet'

'Negative of uncertainty' means that *afë* is used with the future tense and in other situations in which a negative statement is unconfirmed by the speaker (e.g., in a hypothetical statement).

b. NEGATIVE

The Negative Particle *nhai*¹ 'no' is an interjection at the clause or sentence level and functions in the negation slot in the Contrastive Negation Clause (cf. section VII.C.1.b.) and occasionally in negative clauses as the Negation Particles do.

¹While *nhai* basically means 'no', it can be used to mean 'yes' with a cynical, belittling implication with the appropriate gestures and intonation.

c. COMPARATIVE PARTICLES

Comparative Particles either manifest the Relator of a Resemblance Phrase (cf. VI.B.1.) e.g.,

kañjë	'like'
kindë	'like'
hafit	'similar measurement'

or the Manner slot of the clause, e.g.,

iñji	'thus'.
------	---------

'Thus' (iñji) may be classified as a pro-form substituting for an adverb.

d. ADJECTIVAL PARTICLE

One non-inflectable modifier has been observed, wonkwonk 'various'.

e. INTERJECTIONS

There is a small subclass of Particles termed Interjections, i.e., words "of an exclamatory character" (Schachter, ms. to appear). Some of these are listed below with an explanation of their semantic effects.

yo: 'yes, I guess so' is an expression of non-committal response to an idea or question or request.

wayeye 'oh, too bad!', may be used in either a serious or cynical manner.

k¹k¹ (k¹)₀ has a similar import to wayeye although it is used only as a serious sympathetic expression.¹

¹k¹ is pronounced as a velar click. The air stream is cut off by the tongue back, while a slight vacuum is created in the oral cavity with the downward motion of the tongue back, being in contact with the velar point of articulation. The click sound is produced by releasing the tongue back.

p^{h} 'wow' is used as an expression of positive evaluation,¹
 orait 'okay' is a New Guinea Pidgin loan word which has a
 discoursecohesion function as a paus filler between sentences.

¹The sound p^{h} may be described as a squeaky bilabial fricative with
 egressive lip air. The air stream is blocked by the tongue, the lips are
 slightly curled inward so that they are together, and the pocket of air
 which is built up between the lips and the teeth is forced out between
 the tightly-pursed lips by contracting the cheek muscles. This same
 interjection with the same meaning has been reported by Tom Dutton
 (personal conversation) for the Mountain Koiari language (one of the
 South-Eastern Trans-New Guinea Phylum languages of south-eastern Papua--
 a language unrelated to Alambalak).

Chapter IV

NOMINAL CONSTRUCTIONS

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Chapter IV

NOMINAL CONSTRUCTIONS

In Chapter III we discussed the non-verbal word classes of Alambak. In this present chapter we will examine nominal expressions as they build up into complex constructions from stems to phrases.

A. GRAMMATICAL LEVELS

The notion of a hierarchy of grammatical levels is basic to the Tagmemic theory of language (cf. the discussion in Chapter I). There is room for considerable flexibility within the theory, however, as to how many grammatical levels must be postulated for any given language. Longacre (1976:267) suggests a typical arrangement of levels as follows:¹

1. morpheme
2. stem
3. word
4. phrase
5. clause
6. sentence
7. paragraph
8. discourse

This chapter will describe three of the grammatical levels in Alambak, stem, phrase-base, and phrase. These are the first three levels involving constructions (elements with internal grammatical structure). The number of levels at this end of the hierarchy corresponds to Longacre's (1976:267); the terminology chosen for the levels, however, indicates a merging of the traditional word and phrase levels. Three levels are maintained, stem, phrase-base, and phrase, but all three exhibit features which are characteristic of two or more of the traditional levels stem, word, and phrase. The levels in Alambak will be described structurally and an explanation for the diffusion of these

¹Longacre reports that languages may have additional or fewer levels than the typical set (Longacre 1964:112,13; 1976:277). He proposes a constraint of a minimum set of six levels for any given language based on empirical evidence.

characteristics among the three levels will be suggested in terms of the semantic functions of words, and phrases as constituents of clauses.

In our discussion we will adapt Pike's (1967:438) defining features of words along with those discussed by Lyons (1968:202-4) and Matthews (1974:160ff). Features of words include 1) isolatability as minimal utterances no part of which is itself isolatable, 2) permutability as units in a sentence, 3) rigidity or ordering of constituent parts, 4) uninterruptibility of constituent parts (unless a new word is formed by an interrupting formative), 5) the constituent parts of words have different syntagmatic functions (which are non-syntactic) from those in phrases, 6) units are classed as words by analogy with clear cases where they are otherwise indeterminate. Lyons disallows semantic definitions since no definition will apply to words without also applying to phrases. He also disallows phonological definitions due to the lack of total congruence of phonological and grammatical levels and also because of the fact that languages differ as to the matching they make between the basic rhythm-stress phonological unit and a particular grammatical level (word or phrase).

Features two, three, and four are features of phrases as well as words, the difference being only a matter of degree. That is, words typically exhibit greater mobility as a unit within a sentence than phrases, and they show a greater degree of rigidity in the ordering of constituent parts than phrases.¹ Features five and six can only be used as secondary criteria for distinguishing words and phrases due to their circularity. We are left with one feature, isolatability, which provides a fairly clear contrast between words and phrases. There are problems even with this feature, however, as has been widely discussed (cf. Matthews 1974:160-61). For example, in the way that it is stated above, this feature does not include inflected roots as words if the roots themselves may be isolated, e.g., 'cat' in 'cats' may be isolated as a minimal utterance.

¹See Longacre (1964:113) for a discussion of Cashibo structures below the word level with bound morphemes "exhibiting some freedom of mutual ordering." See also Matthews' (1974:162ff) discussion of the "fixed ordering of constituent elements" of words.

It is not surprising that with these defining features, indeterminacy (fuzzy borders) is to be expected between levels as between other units (Pike 1967:438). This may not be a negative factor, however. Given the functional similarity of words and phrases, a merging of the two levels grammatically need not be too surprising.

1. PHRASE LEVEL

The noun phrase in Alambak is analysable into two parts: a base and a terminating complex of phrasal enclitics. The base consists of constructions or morphemes such as Determiners, Quantifiers, Modifiers, the Head, and modifying and limiting enclitics. The phrasal enclitics include Person-Number-Gender markers, Relators (case marking), Elevationals and Emphatic marker.

A simple noun phrase exhibits both word-like and phrase-like characteristics according to the features discussed above. Example 1 will be analysed in terms of those features.

1(a).

Base	Terminator
ɨnd bro fëh -	r
DEM <i>big pig</i> - 3SM	
<i>'The big pig'</i>	

The phrase in example 1(a) is phrase-like by features three and four. Thus while the constituent order is not completely free, there is flexibility in the ordering of its constituents (feature three), e.g.,

(b).

Base	Term
ɨnd fëh bro -	r
DEM <i>big pig</i> - 3SM	
<i>'The BIG pig'</i>	

Any two constituents may be interrupted (feature four), e.g.,

(c).	Base	Term
	ɪnd yawy hitimë bro mif fëh - r	
	DEM <i>dog saw</i> <i>big truly pig</i> - 3SM	
	<i>'The very big pig (which) a dog saw'</i>	

The same phrase is work-like by feature one (the feature of isolatability). Apart from non-inflectable particles and pronouns (cf. Chapter III), only the constituent which is terminated, e.g., with a PNG marker, may be isolated as a minimal utterance. Thus only the last constituent, fëh-r, in example (c) is isolable. All of the other constituents or combinations of constituents are isolable only when properly terminated, e.g., ɪnd-r '*that (one)*', yawy hitimë-r '*the (one) a dog saw*', bro-r '*big (one)*', mif-r '*true (one)*', bro mif-r '*truly big (one)*'.

2. PHRASE BASE LEVEL

The Phrase base exhibits both Phrase-like and stem-like features. In the last section the phrase was shown to be the isolable unit since only terminated strings can occur in isolation. Inasmuch as the phrase is similar to a word in this respect, the phrase minus its terminator (i.e., the phrase-base) is comparable to a stem.

The nonfinal constituents in the phrases in example 1 are like stem-level bound morphemes which cannot occur in isolation. Furthermore, the base may manifest the Head of other bases which are formed by suffixing a clitic to the base in a pattern resembling the derivational stem-forming process which is common in many languages. For example, the noun phrase-base plus -et 'possessed' or -dohra 'nonpossessed' forms a modifier base (cf. Table 44) which occurs as a constituent of another NP. For example, the base in example 1(a) may host the clitic as it does in example 2(a), which is then distributed as a modifier in example 2(b).

2(a). (Non) Possessed Modifier

NP Base	Relator
ɪnd bro fëh - et ¹	
DEM <i>big pig</i>	POSSD

(b).

NP		
NP Base		Term
Modifier	Head	
NP Base		
ɪnd bro fëh - et	yima	r
DEM <i>big pig</i> - POSSD	<i>person</i> - 3SM	
<i>'The man (who) has the big pig'</i>		

The new (Non)Possessed Modifier Base may in turn manifest the head of yet another phrase base which is formed by suffixing another clitic to the new base. The Copular Verb Phrase Base may be thus formed by suffixing the Copula -e to the (Non)-Possessed Modifier Base as in example 3(a) which then manifests the Head of the Copular Verb Phrase as in example 3(b).

3(a). Copular VP Base

Modifier Base		Cop
ɪnd bro fëh - et		- e
DEM <i>big pig</i> - POSSD	- COP	

(b).

COP VP Base		
Modifier Base		
NP Base		
ɪnd bro fëh - et	- e	- r
DEM <i>big pig</i> - POSSD	- COP	- 3SM
<i>'He is (the one who) has the big pig.'</i>		

This pattern of recursive embedding of bases in bases parallels the commonly occurring recursive patterns of stem formation in many languages. In these ways, then, the phrase-base resembles

¹The function of the Possessed clitic -et has been termed Relator. It parallels the derivational function of stem-level derivational affixes by forming one base out of another base.

the stem of a word. It exhibits phrase-like features as discussed for the phrase level in the previous section.

3. STEM LEVEL

The stem level is the domain of lexical derivation. A stem is potentially composed of a root or stem plus a derivational suffix. For example, '*piglet*' is derived from the root fëh '*pig*' plus the derivational suffix -en 'diminutive' giving fëh-en '*piglet*'. '*Piglet meat*' is derived from that stem plus the derivational suffix -pa 'derivative of' as in example 4.

4.

N. Stem
fëh - en - pa
<i>pig</i> - dim - der.of
<i>'piglet meat'</i>

The stem level is partly motivated by the fact that it describes a constituent within the higher phrase-base level. Another motivation for postulating a stem level is a principle used by Longacre (1964:113). That is, a separate grammatical level may be motivated if the constituents of one level have a significantly different function from those of another level. This principle is evident in Pike's fifth feature of words which distinguishes them from phrases on the basis of different syntagmatic functions of their constituent parts versus phrases. The stem level in Alambak may be motivated, then, because the function of the derivational clitic is quite different from the functions of other adjuncts (both roots and clitics) to the head noun in an NP. Noun phrases identify the participants of clauses and the function of the head of the phrase is to identify a class or a unique member of a class who is the participant in the clause. The function of adjuncts to the head is to specify the participant further by either subclassification or providing additional information about the head noun. Thus, '*a man*' delineates a class of entities but '*a big man*', '*a black man*', '*a strong man*', and '*a big strong black man*' are further subclassifications of that class. The function of a derivational

adjunct is quite different, however. Rather than subclassifying the head further, it derives a different class from that which the head by itself identifies. 'Manhood', for example, designates a distinct class which is not merely a subclass of the class designated by the term 'man' alone.

The features which has been discussed above is a traditional feature of stems. The stem level in Alamlak, however, has certain non-stem-like features as well. With certain restrictions, the constituents of a derived stem are interruptible. For example, the constituents of the derived stem fëh-pa ('pig-derivative.of') 'pig meat' may be interrupted by the adjective root bro 'big' as in example 5 below.

5. fëh bro - pa - t
pig big - der.of - 3SF
'A BIG (piece.of) pig meat',¹

The resulting form can be described as manifesting a discontinuous constituent (viz., the derived noun stem) or the derivational affix can be described as a phrase-level constituent. In either case, the interruptibility of the noun stem is a phrase-like rather than a stem-like characteristic.²

¹ A noun phrase with no determiner is unmarked with respect to definiteness and may be translated with either 'the' or 'a' in English. Future translations of this unmarked type will use the indefinite article in English unless the feature of definiteness is particularly focal to the discussion.

² Some derivational affixes, however, seem to completely resist separation from the head noun, e.g., example 6(b) is an unacceptable variation of 6(a).

- 6(a). N Stem
yatk maru - fa' - t
old shell - money - 3SF
'An old (piece of) money'
- (b). *maru yatk - fa - t
shell old - money - 3SF

The phenomenon of 'headless' noun phrases would seem to indicate that the derivational suffix is a phrase-level constituent. A headless NP is an oblique reference to a previously mentioned discourse participant. When the head noun is thus unmanifested, the derivational affix may be manifested without it. The examples in 7. form an acceptable discourse where (b) is a headless NP in reference to pig meat in (a).

- 7(a). fëh - pa - m tē - m
pig - der.of - 3PL be - 3PL
'There is some pig meat.'
- (b). bro - pa - t wahina
big - der.of - 3SF you.give.me
'Give me a big derivative of (pig).'

While some derivational affixes may be separated from the head noun root, its linear position within the phrase relative to the head is stable. The derivational affix must always follow the head noun. Stems, words, and phrases all have a certain degree of rigidity in the ordering of their elements, so that fact in isolation cannot be claimed to be either a stem-like or a phrase-like characteristic. In the case of a more complex stem, strict rigidity of ordering obtains between the two derivational affixes.

- 8.
- | | | | | |
|--------------------------|--------------------|----------------|-----------------|--------------|
| | N Stem | | | |
| | N Stem | | | |
| ufasë | gën | - ha | - pa | - m |
| <i>bad</i> | <i>banana.tree</i> | <i>- fruit</i> | <i>- der.of</i> | <i>- 3PL</i> |
| <i>'Bad banana mush'</i> | | | | |

A change in the order of derivational suffixes results in an ungrammatical string, e.g., *gën-pa-ha-m (*banana-derivative.of-fruit-3PL*).

4. SUMMARY

The arguments for the contrastiveness of the three levels discussed here for Alambhak, stem, phrase-base and phrase are not conclusive. Since our criteria for making a judgement are mostly relative, however, the evidence is sufficient to postulate the levels that we have. These three levels, therefore, will be employed in the description of the grammar, but considering the discussion of their features it must be kept in mind that there is considerable meshing of levels with non-discrete borders.

Huttar (1973) and Pike and Pike (1977: chapter 2) have observed the parallel relationships, both structural and semantic, that hold between pairs of levels such as word and phrase in the grammatical hierarchy. The semantic commonality between words and phrases is that they "name (or label or refer to) things..." (Pike and Pike 1977:23), as Lyons (1968:200) also points out.

Structurally, a word may be the minimal manifestation of a phrase¹ (even as a morpheme may be a minimal stem or a clause a minimal sentence). This is the case because of the similar functions of words and phrases. Thus it is possible to semantically describe a noun as a minimal naming unit and a noun phrase as an expanded naming unit. The two units vary in size (i.e., content) but have the same naming function. Alambhak portrays this semantic relationship in its syntax; inasmuch as the noun phrase has both phrase-like and word-like features it may, therefore, be described in some ways as an expanded word, paralleling a semantic description as an expanded naming unit.

B. NOUN STEM

The internal structure of a noun stem potentially includes a Core and a derivational or classifying suffix. The Core function provides the basic meaning of the lexical item; a derivational affix derives another lexical item from it and a classifying affix classifies the root in some way.

¹ Actually, only a potential nuclear (head) word of a phrase can successfully manifest a minimal phrase, because the function of the head is the function of the phrase as a whole. (Nouns and noun phrases identify clause participants; adjectives and adjective phrases modify nouns.) The adjunct constituents of phrases have different functions to that of the head; they modify or specify the head in some way.

The derivational suffixes are semantically restricted in distribution in stem constructions and the meaning of the derived stem cannot always be deduced by comparing the meanings of the constituent morphemes. It is this feature of derived forms which makes them difficult to place within a description of a language. They seem to occupy an area of overlap between the lexicon and syntax. As Chomsky (1965:184ff) points out, some generalizations can be abstracted from the dictionary in cases of derivational processes. Derived stem constructions are described in Table 33; it must be kept in mind that the table is not a generative formula.

Table 33: Derived Noun Stem Construction

Functions	+ Core	± Derivation
exponents	noun root	-pa 'derivative of'
		-ha 'fruit of'
	Derived Noun	-fa 'money counting mkr'
	Stem	-thëf '(male) resident of' ¹
		-efkot 'female resident of'
		-en 'diminutive'
		-ef 'moderately sized'
		-mif 'true'

Examples of roots plus derivational suffixes are given in example 9.

9(a). bu - pa 'water'
rain - der.of

(b). gën - ha 'banana'
banana.tree - fruit

(c). yawy - en 'puppy'
dog - dim

(d). Yamkopin - efkot 'resident (female) of Amongabi'
Amongabi - resident

¹-thëf has the additional usage of indicating the occupier of a location (other than a village or town) without reference to sex.

- (e). rpa - fa 'one ten-cent piece'
one - money
- (f). yima - mif 'true person'
person - true
- (g). miy - ef 'sapling, small tree'
tree - mod.size

According to Table 33 a derived noun stem may recursively manifest the Core of another derived noun stem. This is possible only to a restricted degree, e.g.,

10.

	N Stem	
	┌───────────┐	
	N Stem	
	└───────────┘	
	gen	- ha - pa
		'banana mush'
		banana.tree - fruit - der.of

Classified noun stems are composed of a root plus a Classifier marker.

Table 34: Classified Noun Stem Construction

Functions	+ Core	+ Classifier
exponents	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 5px;"> Noun Root [+important tree] Kinship Term Root Foreign Object Root </div>	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 5px;"> -m -em -kfë </div>

The class of noun roots semantically defined as [+important tree] includes most trees which are a source of food or manufacturing or building materials, e.g., tea-m 'coconut palm', gën-m 'banana tree', witën-m 'breadfruit tree', rku-m 'two-leaf tree', kip-m 'basket tree'. Notable exceptions are unmarked terms for trees which derive from human beings in Alamlak folklore, e.g., hay 'ironwood tree', nërwi 'garamut tree (*Vtex confossus*)'. Types of sago palms are unmarked as well, e.g., nakw 'sago palm', gi 'wild sago palm', wepin (type of wild sago palm), etc.

Most foreign objects are suffixed with the classifier -kfë. For example, pen-kfë-t (*ink.pen-class-3SF*). For a discussion of Kinship Term stems see III.C.7.

Classified noun stems may not be embedded in another stem. Thus, while 'banana tree' must manifest the classifier suffix, e.g., gën-m-t (*banana-class-3SF*), the expression for the fruit of the banana tree is a derived stem without the Classifier, e.g., gën-ha-t (*banana-fruit-3SF*).

The discussion in this section has been restricted to noun stem formation. For a discussion of Kinship Term Stems and the Demonstrative Stem, see sections III.C.7. and IV.C.2.a., respectively.

C. NOUN PHRASE

The noun phrase is potentially composed of a Nucleus plus a complex of phrasal enclitics as illustrated by Table 35. The Nucleus is manifested by the base which will be described in section two. The phrasal enclitics will be discussed in section one.

Table 35: Noun Phrase Construction

Functions	+ Nucleus	+ Terminator	± Emphatic	± Elevational
exponents	NP Base	Person-Number-Gender markers (V. Table 36)	-n 'emphatic'	Elevational enclitics (V. Table 37)

The configuration of terminator plus peripheral enclitics indicated in Table 35 is diagnostic of the noun phrase versus relator-related (i.e., relator-axis) phrase types. The addition of a Relator (case marking) in varying configurations with the Terminator forms a structural basis for postulating three types of relator-related phrases. The relator-related phrases will be discussed separately (as distinct from the noun phrase) since they contrast in form and function with the non-case-marked noun phrase. They are discussed in their peripheral functions at the clause level in Chapter VI (cf. section VI.C.).

1. PHRASAL ENCLITICS

Phrasal enclitics include obligatory Person-Number-Gender markers and the optional peripheral enclitics viz., the Emphatic marker and Elevational markers.

a. PERSON-NUMBER-GENDER MARKERS

Person-Number-Gender markers syntactically function to terminate the phrase; semantically they indicate the person, number, and gender of the head noun root of the phrase.

Table 36: Person-Number-Gender Markers

	Singular	Dual	Plural
1.	-a(n) ¹	-në(n)	-nëm
2.	-ø(n)	-f+n	-kë(m)
3. (M)	-r		
(F)	-t	-f	-m

The similarity between pronouns and the Person-Number-Gender markers may be seen by comparing Tables 36, 23 and 24. These suffixes are also manifested on the verb as Actor and Undergoer markers (cf. section V.B.2.).

Third-person forms are the most common noun phrase terminators, although other person forms occur in certain phrases with an effect something like an appositional phrase in English, e.g.,

- 11(a). yima - m 'people'
 person - 3PL
- (b). yima - kë 'you people'
 person - 2PL
- (c). yima - nëm 'we people'
 person - 1PL

Gender

Two genders, masculine and feminine, are specified by third-person singular forms. Nouns are not subclassified on the basis

¹The final nasals in parentheses reduce preceding pause.

of gender since only a small set of roots must host one gender suffix or the other, being semantically specified as either masculine or feminine. This set includes names of individuals, or natural objects which (according to local folklore) originated from human individuals, e.g., *mar-r* 'sun' was the son of *yam-t* 'moon'. The following roots are included in this set as well:

<u>Feminine</u>		<u>Masculine</u>	
<i>nēm-t</i>	'female animal'	<i>yiram-r</i>	'male animal'
<i>met-t</i>	'female human, woman'	<i>yindarıy-r</i>	'male human'

Most noun roots, on the other hand, being semantically neutral with respect to sex, may host either gender suffix. These roots are of two types, those for whose referents sex is significant and those for whose it is not.

Noun roots for which sex is significant always select gender markers on the basis of sex. They include roots which refer to humans and higher animals, e.g., dogs and pigs. For example, *yima* 'person' will select *-r* (*yimar* 'man') or *-t* (*yimat* 'woman') depending upon the sex of the referent.

For many noun roots sex is irrelevant, e.g., inanimate roots, and for many others sex reference is neither immediately obvious nor culturally important. These noun roots select one gender marker or the other as their semantically unmarked form on the basis of a secondary or extended meaning of the gender markers. Specifically, the masculine suffix (*-r*) may be used to refer to tall, or long slender, or narrow objects; the feminine suffix (*-t*) may be used for typically short, squat, or wide objects.

Inanimate roots which host the feminine suffix in their 'unmarked' form include terms for house, stool, the ground, fighting shield, and trees which are typically relatively shorter and more squat than other trees. Those hosting the masculine suffix in their 'unmarked' form include terms for arrows, signal trumpet, typically tall slender-growing trees, large string bag varieties, etc. Animate roots which host the feminine suffix in their 'unmarked' form include terms for turtle, frog, insects, short snakes, e.g., death adder, etc.; those which host the masculine suffix include terms for fish, crocodile, and long snakes.

Noun roots which have a semantically unmarked form with respect to gender also have a 'marked' form. When a noun root hosts which is for it the semantically marked gender suffix, that indicates its referent is either atypical as to size or, if it is animate, the sex of the object is in focus. Thus *kuñ-r* 'house' with a masculine rather than the usual feminine suffix indicates that the house is an unusually long one, and *nërwi-r* 'slit gong drum' with the 'marked' masculine suffixes indicates the drum is unusually slender, which implies it was made incorrectly and does not sound good. On the other hand, *bariy-t* 'hornbill' with a feminine instead of the usual masculine suffix indicates, perhaps, that the feminine gender of the bird is in focus.

There are exceptions to the general pattern in which the unmarked gender seems to be arbitrarily assigned. For example, *doh-t* 'canoe' is morphologically feminine in its unmarked form, but it is typically masculine-like in dimensions, i.e., long and slender. *Bindhor-t* 'cassowary' is also usually feminine but is the largest of the birds although typically quite stout. *Mahu-r* (a kind of dove) is masculine, but the most squat of doves.

Some cases of semantically arbitrary gender assignment appear to function to differentiate or accentuate the difference between homophonous or near-homophonous roots. For instance, *ku* 'lime gourd' (example 12(a)) is feminine in unmarked form but does not exhibit the short, fat features of the feminine marker;¹ *ku* 'molar' (example b) is masculine although it is short and fat (feminine-like) compared to other teeth, at least while still in the mouth.

12(a). *ku - t* 'lime gourd'

- F

(b). *ku - r* 'molar'

- M

¹Don Laycock suggested to me (private communication) that the lime gourd may be designated as feminine for other reasons, such as by common association with the vagina.

The roots in example 13 are near-homophonous roots.

13(a). buy - t 'bamboo water carrier'

- F

(b). bu - r 'rain'

- M

Indefinite Reference

Given that the gender system is regular and obligatorily a part of an NP in third singular forms, conflicts are bound to arise in situations in which the speaker is either unable or unwilling to indicate the gender of an object. In those circumstances the third-person plural marker is employed as an indefinite gender marker. For example, the plural marker is used with yën 'child' in example 14 not to indicate plural number, but to avoid specifying the unknown sex of the child.

14. yën - m heawrahtm ðndom yamtn
child - 3PL she.will.bear.them another month.in
'She will bear a child in another month.'

b. EMPHATIC MARKER

The Emphatic clitic -n optionally follows the Person-Number-Gender clitic.

15. fëh - m - n 'PIGS!'
pig - 3PL - EMP

c. ELEVATIONAL MARKERS

The Elevational enclitics occur on the noun phrase to indicate the location of the head noun with respect to the speaker. They are also suffixed to the verb often in conjunction with Elevational prefixes (a different set of elevational markers) (cf. section V.B.2.).

Table 37: Elevational Markers

-ko	'up'
-i(t)o	'on the level'
-he ~ -we	'down'

- 16(a). fëh - m - ko 'pigs up (there)'
 pig - 3PL - up
- (b). fëh - m - n - ko 'pigs up (there)'
 pig - 3PL - EMP - up

2. NOUN PHRASE BASE

The general form of the Alamlak Noun Phrase Base is given in Table 38. This construction will be used as a framework within which to discuss other constituent constructions of the noun phrase. Phrase constructions which do not manifest functions in the noun phrase will be discussed later in section D.

Optionality restrictions may be stated once for the constituents of the NP Base construction. Any single function slot not filled by a clitic may manifest the base of a noun phrase. In general, a fully manifested base (all slots manifested) is extremely rare, presumably for stylistic and processing reasons. Noun phrases most frequently occur with two slots manifested. One or three slots are less frequent combinations, and the occurrence of more than three slots (head plus two other including enclitic slots) is extremely rare.

Permutability and co-occurrence restrictions will be mentioned in the discussion of each function slot. Co-occurrence restrictions on specific exponents of particular slots are not expounded here as time and space do not allow such a comprehensive task to be achieved.

Table 38: Noun Phrase Base

Functions	+ (± Deter- miner ₁	± Deter- miner ₂	± Quantifier	± Outer Modifier	± Inner Modifier	± Head)	± Clitic Modifier	± Exhaustive Quantifier	± Limiter
exponents	Demon- strative Root	Pronoun of Difference wom	Numerals (1-4)	General Relative Clause	Adjective Phrase	Noun Stem	-mku 'portion of'	-buga 'all'	-rpa 'only' (one)
	Demon- strative Stem			Purpose Relative Clause	Interrogative Root	Interr. Root	-ñimbiha 'portion (length) of'		
			Ordinal Numeral stem (Table 41)	(Non) Possessed Modifier		Qual. Nom. Base	-sk 'deteriorated'		
		E/R Pronoun Root		Possessive Phrase		Com- posite Nom. Base			
			Adjectival Particle			Nominal Clause			
						Kinship Term Stem			

a. DETERMINER₁ FUNCTION OF THE NOUN PHRASE

The Determiner₁ function is a deictic function whereby the referent of the Head noun is specified deictically in either linguistic or extra-linguistic context. An exponent of the Determiner₁ function semantically marks the Head noun as definite. A definite noun is that noun whose referent the speaker assumes to be identifiable by the hearer (Chafe 1976). The Demonstrative Root and Demonstrative Stem perform the Determiner₁ function (cf. Table 38).

Permutability

The Determiner₁ slot occurs base-initially in texts and is preferred in that position in informal conversation although it is allowable in other pre-head positions. Only in elicited materials may it occur subsequent to the head and is thus only marginally acceptable in that position.

17(a). NP Base
 ind yima - r 'the man'
 DEM man - 3SM

(b). ? yima ind - r 'the man'
 man DEM - 3SM

Exponents of Determiner₁

The Demonstrative Root is discussed in section III.C.6. The Demonstrative Stem is described in Table 39 below.

Table 39: Demonstrative Stem

Functions	(+ Core	± Proximity) ^R
exponents	Demonstrative Root	-ar 'near' -ur 'far'

Reduplication of the Demonstrative Stem has the semantic effect of referring to the head noun as a type of generic with or without a partitive meaning.

18. DEM Stem
 ind - ind yima - m '(some of) these sorts of men'

b. DETERMINER₂ FUNCTION OF THE NOUN PHRASE

The Determiner₂ is manifested by the Pronoun of Difference, wom, and may be glossed as 'other, another, some, some other'.¹ It typically functions to contrast the Head noun with a different, known referent of the same class, although it may occur without such contrast.

Permutability

The Determiner₂ slot freely permutes to any pre-Head position. In forty occurrences in text, the Determiner₂ slot never followed the Head slot. In elicitation, however, given certain contexts, it was permissible to permute Determiner₂ slot to the subsequent position, e.g.,

19. Head Det₂
 yima wom - m 'other men'
 man other - 3PL

Example 19 is appropriate in the case of correcting someone's misunderstanding about the identity of participants in a particular situation. A preliminary hypothesis is that the post-Head position is a position of emphasis or clarification. It is not always possible to identify a particular semantic effect caused by varying the unmarked order given in Table 38. Flexibility in ordering may simply provide a means to avoid ambiguity.

20. Out. Mod Det₂ Head Term
 temb - t - ho wom \emptyset - t
 bow - 3SF - GEN another \emptyset - 3SF
 'another (one) of a bow'

Example 20 occurs in a discourse where all of the fire-starting bamboo strips had been used up in trying to start a fire. Then

¹The term 'Pronoun of Difference' is taken from Jespersen (1976:179).

another bamboo strip was tried, this time one from a bow (designated by the phrase in example 20). The order of elements in 20 avoids a possible ambiguity which would result from the unmarked order (Table 38). With the pronoun preceding the possessive phrase, it could be interpreted as a constituent of the possessive phrase, e.g.,

21. Out. Mod: POSS. PH Head Term
 wom temb - t - ho ϕ - t
 'another bow's (one)'

The structural description in example 21 would give a misleading meaning in the discourse. The phrase in 21 refers to a bamboo strip of another bow (implying that at least two bows were involved). The phrase in 20 does not refer to a different bow, but only to a different bamboo strip, this time taken from a bow.

c. QUANTIFIER FUNCTION OF THE NOUN PHRASE

The Quantifier function serves to specify the number or quantity of the Head noun.

Permutability

The Quantifier slot may permute to any position in the base.

Exponents of the Quantifier Function

The exponents of the Quantifier function are numerals one to four, the Co-ordinate Additive Base, Ordinal number stem, Emphatic/ Reflexive Pronoun Root (cf. III.C.1.) and Adjectival Particle (cf. III.C.12.).

Three numeral systems co-exist in Alamblak: a borrowed tally system, the borrowed New Guinea Pidgin system, and a mixed binary/quinary/vigesimal system (primitive numbers of one, two, five, and twenty). There are some further variations based on the presently used system, i.e., money-counting numerals are derived from the basic numerals (cf. Appendix B). Ordinal numbers are also derived from the basic cardinal numerals.

1) CARDINAL NUMERALS

The present numeral system is based on five primitive numbers, viz.,

rpa 'one'
 hos 'two'
 tir 'five' (literally 'hand/arm')
 wura 'five' (literally 'foot/leg')¹
 yima 'twenty' (literally 'person')

Numerals 'three' and 'four' are frozen constructions which transparently derive historically from a co-ordinate numeral phrase construction.

hos - f - i - rpa - t 'three'
 two - 3D - CONJ - one - 3SF
 hos - f - i - hos - f 'four'
 two - 3D - CONJ - two - 3D

The construction of these two numerals forms an interesting combination of word and phrase characteristics. These numerals are left unanalysed morpho-syntactically and yet not listed as primitive numbers in the grammar because of their persistence in exhibiting some phrasal characteristics.

Word-like Characteristics

The historical construction has been phonologically condensed into one word-like unit. Most phrases are terminated with Person-Number-Gender markers, and each such unit predictably receives a primary stress, (cf. section II.E.1.). Numerals 'three' and 'four' have the form of two phrases conjoined with -i. Normally two such conjoined phrases will each manifest primary stress, e.g.,

22. 'fëh - m - i 'yira - m
 pig - 3PL - CONJ fish - 3PL
 'pigs and fish'

The numeral construction operates as a single phonological unit, however, with a single primary stress on the conjunction enclitic.

¹ wura 'five' occurs in expressions containing fifteen modulo twenty.

23. hos - f - 'i - rpa - t 'three'
two - 3D - CONJ - one - 3SF

Morphologically the unit is a frozen form with the internal PNG marker and conjunction -i morphemes syntactically fixed and functionally inoperative as independent morphemes. The PNG 'affix' is positionally fixed in that its ordering is rigid and cannot be interrupted with other morphemes like the ordering of a normal phrase terminator can be. In other words, the first root, hos 'two' cannot be expanded in any way before affixing the PNG marker -f '3D'. The final PNG marker, however, operates as a normal phrase terminator allowing the base to be expanded in the normal way. Thus example 24(a) is unacceptable, whereas (b) is acceptable.

- 24(a). * hos - rpa - f - i - rpa - rpa - t
two - only - 3D - CONJ - one - only - 3SF
(b). hos - f - i - rpa - rpa - t 'only three'
two - 3D - CONJ - one - only - 3SF

While the meanings of the frozen affixes -f '3D' and -i 'co-ordinate conjunction' are still transparent in the structure, they no longer function as a normal PNG marker and conjunction. The Alamlak co-ordinate conjunction is syntactically controlled such that the second and subsequent conjunctions in a sequence of phrases have the form -e, e.g.,

25. fëh - m - i yira - m - e yawy - m (- e)
pig - 3PL - CONJ fish - 3PL - CONJ dog - 3PL (- CONJ)
'pigs and fish and dogs'

In the case where the numeral 'three' or 'four' is manifested as the initial constituent of a co-ordinate phrase, it is conjoined to the following phrase(s) by the first occurring form of the conjunction (-i) as in example 26.

26. $\overbrace{\text{te}mb \text{ hos} - f - i - rpa - t}^{\text{NP}} - i \overbrace{\text{b} \ddot{e}k \quad \ddot{n}a - m}^{\text{NP}}$
bow two - 3D - CONJ - one - 3SF - CONJ plenty arrow - 3PL
- $\overbrace{- e}^{\text{CONJ}} \overbrace{\text{b} \ddot{e}k \quad k \ddot{e}fra - m}^{\text{NP}} (- e)$
 CONJ *plenty spear - 3PL* (- CONJ)
- 'three bows and plenty of arrows and plenty of spears.'*

Were the conjunction morpheme *-i* which is internal to the numeral construction operative as a phrase level conjunction, then there would be four constituent phrases and the conjunction following *rpa-t 'one'* would have to have the form *-e* instead of *-i*.

Phrase-like Characteristics

So far numerals *'three'* and *'four'* fit the pattern of a word with the internal structure of a phrase. In one respect, however, these numerals show vestiges of their co-ordinate phrase-like structure. Unlike a normal phrase terminator, the person, number and gender of the terminator of these numeral forms is not governed by the person, number and gender of the noun which the numeral quantifies; it is rather governed by the second root of the numeral base (i.e., *rpa 'one'* or *hos 'two'*) as if it were a separate phrase in a sequence of phrases. Thus, in example 26, the terminator of the first NP is *-t '3SF'*, agreeing with *rpa 'one'* rather than *-m 'plural'* in agreement with *te**mb** 'bow'*, the head noun, of which there are three being referred to. These numerals are stereotyped enough in form that the gender as well as the number of the terminator often does not agree with the head noun of the phrase, e.g.,

27. $\overbrace{\text{hos} - f - i - rpa}^{\text{Quantifier}} \overbrace{yima}^{\text{Head}} - t \overbrace{\text{'three men'}}^{\text{Term}}$
two - 3D - CONJ - one person - 3SF

The phrase in example 27 is a very common way of talking about

three male as well as three female persons.¹

The above discussion covered numerals 1-5 and 20. One, two, five, and twenty are listed as primitive numbers. Numerals three and four may be described equally well as primitive or complex unanalysable numerals. Next we will consider other expressions for 'five, 'ten', 'twenty', modulo twenty.

Table 40: Multiplier Base
(Numerals for 5, 10, 20, Modulo Twenty)

Functions	+ Head	+ Delimiter
exponents	tir	yoht
	'hand'	'whole'
	yima	Numerals
	'person'	(2 - 4)

The Multiplier Base may manifest the Nucleus of the Multiplier Phrase in the forming of larger numerals. The Multiplier Phrase is described in Table 142, in Appendix B.

When manifesting the Quantifier function of an NP, the Multiplier Base is used to express numerals five, ten, twenty, modulo twenty. Numerals five, ten, and twenty are illustrated in example 28 below.

28(a). M. Base
tir yoht - t 'five'
hand whole - 3SF

¹A superficial look at this problem may suggest that a transformational approach would provide a better description. By such an approach the number agreement could be described as the result of the deletion of one NP under identity with an NP in the following phrase. Thus example 27 would syntactically derive from underlying *hos yima-f-i rpa yima-t* 'two men and one man' in the same way that 'two sick and one dead chicken' derives from 'two sick chickens and one dead chicken'.

Such a solution is a reasonable explanation for the number agreement in example 27, but it cannot explain the gender agreement. The PNG marker agrees with the numeral which hosts the feminine in its 'unmarked' form, *rpat*, such as when used in counting.

- (b). M. Base
 tir hos - f 'ten'
 hand two - 3D
- (c). M. Base
 yima yoht - r 'twenty'
 person whole - 3SM

The remainder of the numeral system is described in Appendix B. With the additional constructions described there, the numeral system theoretically has the potential of forming any numeral. In practice, however, only a limited number of digits are formed in this system. The level of acceptable efficiency of the system seems to include numerals 1-10 and then by tens to forty. The greatest operating efficiency is in the 1-5 zone. Higher numerals are frequently expressed in the New Guinea Pidgin system. It is certainly the case that numerals other than those mentioned would not be formed in the vernacular system as Quantifiers in a noun phrase. Higher numerals in the vernacular system would only be used for counting or tallying. Other counting systems, viz., the money-counting system and the traditional tally system will be discussed in Appendix B with these higher counter numerals.

2) ORDINAL NUMERALS

Most Ordinal numbers are morphologically derived from Cardinal numbers. Two are mentioned here which are not so derived:

gashëf-r, barkëf-r 'first'
 wirëh-r 'last'

Other Ordinals ('second', 'third' and 'fourth') derive from Cardinals by the suffixation of -yuk, or -eh (with 'third' and 'fourth').

Table 41: Ordinal Numeral Stem

Functions	+ Core	+ Derivation
exponents	numeral roots (2-4)	-yuk -eh

Notes: -eh co-occurs only with numerals 'three' and 'four'.

(b).	<u>Noun Phrase</u>		<u>Appositional Phrase</u>				
		-	<u>Out. Mod.</u>		<u>Head</u>		<u>Term</u>
	ɪnd habhi kmi	-	na ɪnd kfë	-	ø	-	t
	DEM <i>small place</i>	-	3SF I DEM <i>speak</i>	-	R.PST ø	-	3SF
	<i>'the small place, (the one about) which I spoke'</i>						

Exponents of the Outer Modifier

Exponents of the Outer Modifier function are the General Relative Clause, the Purpose Relative Clause, the (Non)Possessed Modifier, and the Possessive Phrase. Of these Outer Modifiers, the General Relative Clause, the Purpose Relative Clause, and the verbal form of the (Non)Possessed Modifier are termed 'embedded clauses'. Embedded clauses are discussed and contrasted with subordinate clauses in Chapter IX.

Embedded clauses are constituents of constructions on or below the clause level. They contrast with independent clauses in the following general ways. Embedded clauses 1) typically have nonfinite predicates, 2) occur without Actor and Undergoer pronominal suffixes (cf. V.B.2), 3) potentially incorporate nouns into the verb stem of the predicate (cf. V.B.3), and 4) some embedded clauses potentially exhibit genitive forms of noun phrases (marked in the same way that possessive phrases are) for those noun phrases which correspond to nuclear NP's of independent clauses. Independent clauses, on the other hand, 1) typically manifest only finite predicates with Actor and, frequently, Undergoer pronominal suffixes, 2) tend not to incorporate nouns into the verb stem of the predicate, and 3) do not exhibit genitive noun phrases; nuclear NP's are unmarked for case in independent clauses. The syntax of independent clauses is described more fully in Chapter VI.

1) GENERAL RELATIVE CLAUSE

The first Outer Modifier to be discussed is the General Relative Clause which is described in Table 42. As noted there, the peripheral functions are the same as they are for independent clauses. The distinctions between the three nuclear functions in independent clauses, Subject, Inner Object, and Outer Object, are never completely maintained in the General Relative Clause,

however. The reason for this loss of grammatical contrast is that the reduced form of the verb lacks the pronominal affixes which identify the functions of each nuclear NP in independent clauses.

There are two relativization strategies within the framework of the General Relative Clause. Subjects, objects, and obliques are relativized on with a non-case-encoding strategy.¹ This strategy employs the General Relative Clause without manifesting the optional Terminator plus Relator complex (cf. Table 42). The Head noun being relativized on² is not explicitly referred to within the relative clause, nor is there any indication of its semantic role within the relative clause. Of the oblique NP's, a Comitative is not relativizable (cf. the discussion of the Comitative in section VII.C.3. which concludes that the Comitative is a conjoined rather than a case-marked NP). Neither is the object of a comparative relativizable.

The strategy which employs the relative clause with the Terminator plus Relator is used to relativize on the Genitive (i.e., possessor) of a Possessive Phrase. In that strategy the genitive case of the head noun is indicated by the Relator, -ho 'genitive' within the relative clause.

These two relativization strategies are illustrated in examples 35 and 36. Before those examples are given, we will discuss the function slots of the General Relative Clause and their exponents in more detail.

¹Where subject properties are split between NP's of a clause, only the referentially prominent NP may be relativized on; thus inalienably possessed items are not relativizable even though they may be marked as Actor in an independent clause. For those NP's which are neither Subject nor Object, the NP Accessibility Hierarchy as formulated by Keenan and Comrie is not applicable. See section VII.C.3.a for a suggested modification of the Accessibility Hierarchy

²The noun which is relativized on by the relative clause is the head noun of the NP (in the matrix clause) which the relative clause modifies. The constraints on which grammatical roles the relativized noun may have for each relativization strategy refer to the function of that noun within the relative clause; its function within the matrix clause is irrelevant for purposes of relativization.

Table 42: General Relative Clause

Functions	± Peripheral functions	+/(± Subject	± Inner Object	± Outer) Object	± Rela- tivizer	+ Predicate	±(+ Terminator	+ Relator)
exponents	(v. clause peripheries in Chapter VI)	[NP NP NP Base]	[NP NP Base -]	[{ NP NP Base } NP Base -]	DEM Root	Verb Base (with restrictions)	PNG marker (V. Table 36)	-ho 'Genitive'

NOTES: The +/± notation refers to the fact that one function slot enclosed in the following parentheses is obligatory with a two-place or three-place predicate, but all are optional with one-place predicates.

Nuclear NP Functions of the GEN REL Clause

The nuclear NP's of the General Relative Clause are never completely distinguishable grammatically. The Subject NP is distinguished from the Inner and Outer Objects¹ in that it may never be manifested by an NP Base (i.e., a noun which is incorporated in the verb stem) in multiplace predicates. Inner and Outer Objects may be expressed by NP's or NP Bases. Ultimately the latter two can only be distinguished by appealing to different semantic roles which they encode in independent clauses. Thus an NP which expresses an Affective role is interpreted to be an Inner Object because only Inner Objects encode the Affective role in independent clauses.

Examples in 31 illustrate nuclear NP's manifested both as NP's and as NP Bases.

31(a).

met - t maroha - m haymë yima - r
 woman - 3SF money - 3PL gave person - 3SF
 'a man (who) gave money to a woman'
 'a man (to whom) a woman gave money'

(b).

met - t maroha - haymë yima - r
 woman - 3SF money - gave man - 3SM

(c).

met - maroha - haymë yima - r
 woman - money - gave man - 3SM
 'a man (who) gave money to women'

(d).

met - t hoitwa kuñ - t
 woman - 3SF sleeps house - 3SF
 'a house (in which) a woman sleeps'

(e).

met - hoitwa kuñ - t
 woman - sleep house - 3SF
 'a house (in which) women sleep'

¹Cf. sections VI.D. and VII.B.3. for a discussion of the roles these functions play in the clause.

Word order tends to differentiate Subject, Inner Object, and Outer Object NP's since they generally occur in the order given in Table 42. The order is not strict in relative clauses, however, as it is in certain other types of subordinate clauses (cf. IX.B.).¹

In many cases, then, Subject, Inner Object, and Outer Object functions cannot be unambiguously assigned to NP's in a relative clause on the basis of their structural manifestation or linear order. Likewise, the semantic roles of unmarked NP's in a relative clause are often ambiguous and can be interpreted only on the basis of the meanings of the lexical items and the context.

Relativizer Function of the General Relative Clause

The Relativizer is optional. Its occurrence seems to be governed by pragmatic factors of hearer-based considerations on the part of the speaker. Thus, the Relativizer is used in a relative clause which the speaker considers to contain too much information for easy processing by the hearer. These relative clauses usually follow the Head noun of the matrix Noun Phrase. There does not appear to be any contrast, other than mere size, between relative clauses which include the Relativizer and those which do not. Thus the presence or absence of the Relativizer does not seem to establish a contrastive relativization strategy.

¹For example, *nēm rēm haymē maroham*
we they gave money

may mean either '*money we gave them*', or '*money they gave us*'. The data at hand are insufficient to adequately test any hypothesis which introduces referential factors as an explanation for alternate word order (e.g., Inner Object - Subject for the second translation of the sentence above). One recorded unacceptable utterance does suggest, however, that word order is controlled to some degree by some type of referential factors. Example 32(a) is unacceptable whereas a change in word order renders it acceptable (b).

32(a). $\overbrace{\text{GEN REL CL}}$
* *īnd maroham nēm haymē mērhor*
DEM money us gave European

(b). $\overbrace{\text{GEN REL CL}}$
īnd nēm maroham haymē mērhor
us money
'*The European (who) gave us money / the European (to whom) we gave money*'

Relative clauses in example 33 occur with and without the Relativizer.

- 33(a). GEN REL CL
 †nd habhi kmi na †nd - kfëmë - t
 DEM *small place* I DEM - *said* - 3SF
 '*the small place (about) which I spoke*'
- (b). GEN REL CL
 †nd kmi na kfëmë - t
 DEM *place* I *said* - 3SF
 '*the place (about which) I spoke*'

The Relativizer function is manifested by the Demonstrative root. Always occurring next to the verb, the Demonstrative root is always incorporated into the verb. The Demonstrative functioning as a Relativizer cannot be terminated as a phrase, therefore example 34 with a terminated Relativizer is unacceptable.

34. GEN REL CL
 * na †nd - r kfëmë - t
 I DEM - 3SF *said* - 3SF

Most relative clauses are short, occur before the head noun (per Table 38), and do not exhibit the Relativizer, as in example 35.

35. Out. Mod. Head Term
 nëm Ukarumpakorn yimë wik - r
 we (pl) *to.Ukarumpa went week* - 3SM
 '*The week we went to Ukarumpa*'

Predicate Function of the General Relative Clause

The predicate function of the General Relative Clause serves to identify the state or event which is predicated of the clause participants. Exponents of the predicate function are verb bases in any mood and with any aspect with the restriction that imperfective forms must also have the so-called Presupposition mood marker, (cf. section V.B.1.c.). Only finite verbs can manifest

the predicate function, thus the Copulative Verb Base cannot occur as the predicate of a relative clause.¹ Examples in 37. illustrate relative clauses with different predicate forms.

- 37(a). GEN REL CL
kuk - w - a yima - m
bathe - PR.IMPV - PRSUP person - 3PL
'men (who) are bathing'
- (b). GEN REL CL
ni hik - r - fë yima - r
you follow - IRR - I.PST person - 3SM
'a man (who) would have followed you'
- (c). GEN REL CL
maroham a - yak - r - fë yima - r
money HORT - get - IRR - I.PST person - 3SM
'a man (who) should have gotten money'
- (d). * bro - e yima - r
big - COP person - 3SM
 * 'a man (who) is big'

The predicate of a relative clause conveys more information than an adjective does, but it conveys less information than the predicate of either a subordinate or independent clause of a sentence. The predicate of a relative clause does not manifest markers of the switch-reference system found in certain subordinate clauses, nor does it indicate role relationships within the clause since it lacks person-number-gender pronominal markers. This latter rather severe semantic restriction is a by-product of the fact that relative clauses are constituents of noun phrases.

¹It is suggested here that Copulative Clauses cannot be embedded as a relative clause in a noun phrase in Alamlak since it would generate a redundant or near-superfluous construction (vis-a-vis an adjective-plus-noun construction such as example 36).

36. bro yima - r
big man - 3SM
'a big man'

This is equivalent to claiming that relative clauses are functionally equivalent to adjectives (i.e., they are all modifiers). Conversely adjectives may be considered to be manifestations of semantically condensed or subordinated stative predicates of propositions, a typical Generative Semantics position.

The noun phrase is delineated as a semantic unit by terminal clitics, therefore the embedded modifier does not manifest these terminators.

Like a subordinate clause in a sentence, a relative clause is semantically subordinate to the predication of the independent clause. Apart from the restriction in information conveyed by the predicate, this subordination is indicated by the presence of the Presupposition mood marker on the verb, cf. example 37(a). The function of this mood marker seems to be to background the predication of the relative clause vis-a-vis the predication of the main verb.

Perhaps another reflex of the subordinate nature of a relative clause within the matrix clause is its structural compactness. This compactness is manifested by the potential of the predicate to incorporate minimal NP bases into the verb base. (Cf. the discussion of noun incorporation in section V.B.3.b.).

There are restrictions on the degree of compactness allowed in a relative clause, however. As indicated in Table 42, at least one nuclear noun phrase must be manifested in the relative clause containing a two-place or three-place predicate. This requirement is necessary for relative clauses since there is no other way to identify or refer to conceptually obligatory participants of the relative clause. Independent verbs manifest pronominal suffixes (Person-Number-Gender markers) which co-reference those participants and therefore do not require the explicit mention of them as NP's in the clause if they are known from the context.

Terminator and Relator Functions of the GEN REL CL

A PNG marker and Genitive suffix occur as clitics on the relative clause when relativizing on Genitives (i.e., possessors) of Possessive Phrases. The Person-Number-Gender marker is concordant with the possessed item (which must be referenced by an NP in the relative clause). (See the discussion of the examples in 38.) The Genitive marker indicates the function of the head noun within the relative clause.

Examples

Examples 38 and 39 illustrate relative clauses as they relativize on positions of the Noun Phrase Accessibility Hierarchy (cf. Keenan and Comrie 1977).¹

38 (a).

	GEN REL CL					
	In.	In.				
	Subj/Obj	Obj/Subj				
ind	ϕ	fēhr	was	- mē	yawyr	- t
DEM	ϕ	pig	pierce	- R.PST	dog	- 3SF
	<i>'the dog (who) bit a pig'/'the dog (whom) a pig bit'</i>					

(b).

	GEN REL CL			
	Subj			
ind	ϕ	tur	fufur	- mē yima - r
DEM	ϕ	E/R	cut	- R.PST man - 3SM
	<i>'the man (who) cut himself'</i>			

(c).

	GEN REL CL					
	In.	Obj./Subj				
ind	ϕ	nēm	maroham	hay	- mē	mērho - r
DEM	ϕ	we	money	give	- R.PST	European- 3SM
	<i>'the European (to whom) we gave money / the European (who) gave money (to) us'</i>					

(d).

	GEN REL CL					
	Subj					
	ϕ	kaunsel	tēh		- mē	yima - r
		counsellor	be standing		- R.PST	man - 3SM
	<i>'a man (who) was a counsellor'</i>					

(e).

	GEN REL CL					
	Ins					
	ϕ	na	yawyr	ind	- tat - mē	mīy - t
		I	dog	DEM	- hit - R.PST	stick - 3SF
	<i>'a stick (with) which I hit a dog'</i>					

(f).

	GEN REL CL					
	S.Set					
ind	ϕ	yimam	gīrha	- mē	kuñ	- t
DEM	ϕ	men	dance	- R.PST	house	- 3SF
	<i>'the house (in which) men danced'</i>					

¹The grammatical function of the noun phrase within the relative clause, not within the matrix sentence, is what is referred to as the position on the AH being relativized on.

- (g). GEN REL CL
- Subj (of comparative)
- ϕ Pianr hafit yorh - w - a yën - m
- ϕ like be.seated - IMPF - PRSUP children - 3PL
- 'children (who) are like (e.g., the same size as) Pianr'

The Genitive (i.e., possessor) of a possessive phrase is relativized with a case-marking strategy where the relative clause has the following structures: a PNG marker concordant with the possessed item (extant in the relative clause) and the Possessive marker -ho (indicating the role of the Head noun) occur as enclitics to the relative clause. With the common form of the relative clause (verb-final) the PNG marker might appear to be an actor on the verb, e.g., example 39(a).

- 39(a). GEN REL CL
- GEN
- ϕ yimar kuñt hiNgna - më - r - ho met - t
- ϕ man house build - R.PST - 3SM - GEN woman - 3SF
- 'a woman whose man built a house'

- (b). GEN REL CL
- GEN
- ϕ kuñt hiNgna - më yima - r - ho met - t
- ϕ house build - R.PST man - 3SM - GEN woman - 3SF
- 'a woman whose man built a house'

In example (b), the possessed item is last in the clause and therefore hosts the enclitic markers (only one PNG marker occurs) rather than the verb. The PNG marker cannot, then, be functioning as the Actor marker on the verb in (a).

2) PURPOSE RELATIVE CLAUSE

The next exponent of the Outer Modifier function to be discussed is the Purpose Relative Clause, which is displayed in Table 43.

Table 43: Purpose Relative Clause

Func	± Periphery	± Subject	± In. Object	± Out. Obj	± Rela- tizer	+ Pred
exp	(V. clause peripheries in Ch. VI)	[NP]	[NP]	[{ Genitive NP NP Base } NP]	DEM root	Purpose verb
		[NP]	[{ NP Genitive NP NP Base }]	[NP Base]		
		[{ NP Genitive NP } NP Base]	[NP BASE?]	[NP Base]		
			[--]	[--]		

The Purpose Relative Clause is similar to the General Relative Clause in many ways. The peripheral functions, the Relativizer function and their exponents are the same as for the General Relative Clause. The grammatical relations, and thus the semantic roles, of the nuclear NP's are often syntactically indeterminate. The Predicate function is manifested by a specially marked non-finite verb. The Predicate function and the nuclear NP functions and their exponents will be discussed briefly below.

Predicate Function of the Purpose Relative Clause

The predicate function serves to identify the state or event which is predicated of the clause participants and which is also the functional purpose of the Head noun. This function is similar to that of the predicate of the Purpose Clause indicating the purpose for which the predicate of the matrix clause is predicated (cf. section IX.A.2.).

The predicate function is manifested by a Purpose verb, i.e., a verb stem (cf. section V.B.3) plus the subordinating Purpose marker -yuk.

Nuclear NP Functions of the Purpose Relative Clause

Inner Objects and Outer Objects may be manifested in three ways: by NP Bases (i.e., incorporated nouns), Genitive NP's, or by NP's which are unmarked for case. The Subject may be incorporated in a one-place verb, but it is manifested as a Genitive NP or unmarked NP in clauses with multi-place verbs.

Only one Genitive NP may occur in a relative clause at a time. Patterns in the occurrence of Genitive NP's in dependent clauses in general are discussed in section IX.B. For the Purpose Relative Clause, the pattern appears to be strictly controlled by syntactic factors (i.e., not variable according to the speaker's choice although the speaker retains the option of choosing a genitive form or some other form for an NP). Thus, with three-place predicates, the Outer Object (i.e., Patient noun) may be marked with the Genitive. The Inner Object can be marked with the Genitive only if the Outer Object is either not expressed in the clause, or if it is incorporated into the verb. The Subject may take the Genitive marker only if both Inner and Outer Objects are either not expressed or are incorporated. This strict syntactic pattern enables the nuclear NP's to be distinguished with certain configurations of genitive-case-marked and unmarked NP's.

Patterns of genitivization are illustrated in example 40 below:

- 40(a). PUR REL CL
- | | | |
|--|---|---|
| | Out. Obj | |
| yinem - r | yemrë - r - oh | wikna - hay - yuk yima - r |
| <i>child</i> - 3SM | <i>meat</i> - 3 - GEN.PL | <i>buy</i> - BEN - PUR <i>man</i> - 3SM |
| <i>'a man to buy meat for a child'</i> | | |
- (b). PUR REL CL
- | | | |
|--|---|--|
| | In. Obj | |
| yinem - r | - ho yemrë - wikna - hay - yuk yima - r | |
| <i>child</i> - 3SM | - GEN <i>meat</i> - <i>buy</i> - BEN - PUR <i>man</i> - 3SM | |
| <i>'a man to buy meat for a child'</i> | | |
- (c). PUR REL CL
- | | | |
|---|--|--|
| | In. Obj. | |
| neëm rmëntemb - t | - ho wikna - yuk maroha - m | |
| <i>us</i> <i>shotgun</i> - 3SF | - GEN <i>buy</i> - PUR <i>money</i> - 3PL | |
| <i>'money for us to buy a shotgun (with)'</i> | | |

- (d). PUR REL CL
Subj
 nēm - oh marñiŋgha - wikna - yuk maroha - m
 we (pl) - GEN wristwatch - buy - PUR money - 3PL
 'money for us to buy a wristwatch (with)'

Examples

The examples in 41 illustrate Purpose Relative Clauses as they relativize on positions of the Accessibility Hierarchy. The scope of the Purpose Relative Clause seems to parallel that of the General Relative Clause, although data is not available on the relativizability of the Genitive of a Possessive phrase.

- 41(a). PUR REL CL
Subj
 ∅ yifën - wikna - yuk masta - m
 ∅ carving - buy - PUR European - 3PL
 'Europeans (whose purpose is) to buy carvings'
- (b). PUR REL CL
In.Obj
 ∅ nohta - yuk naku - t
 ∅ plant - PUR sago.palm - 3SF
 'sago palm for planting'
- (c). PUR REL CL
Ins
 ∅ yifën - r - oh hiŋgha - yuk ho - mku - m
 ∅ carving - 3 GEN.PL work - PUR adze - piece - 3PL
 'adzes for making carvings'
- (d). PUR REL CL
S.Setting
 ∅ met - r - oh wikna - yuk tkit - t
 ∅ woman - 3 - GEN.PL buy - PUR place - 3SF
 'a place for buying brides'

3) (NON) POSSESSED MODIFIER

The next exponent of the Outer Modifier function to be discussed is the (Non)Possessed Modifier which is displayed in Table 44.

Table 44: (Non)Possessed Modifier Base

Functions	+ Head	+ Relator
exponents	nonfinite clause	-et. 'possessed'
	expanded Adjective Phrase	-dohra 'nonpossessed'
	NP Base	

The terminating suffixes function differently depending on the exponent of the Head. When a clause or expanded Adjective Phrase manifests the Head, the construction characterizes the head noun of the Matrix Noun Phrase in terms of the Adjective Phrase (cf. example 47(d)), or in terms of the state or action of the predicate of the clause, e.g., 42(a). When a Noun Phrase Base manifests the Head, the 'possessed' enclitic identifies the item which is possessed by the head noun and the 'nonpossessed' enclitic represents its negation (e.g., 42(b)).

42(a). (NON)POSSD

Modifier

nur - et yën - r
 cry - POSSD child - 3SM
 'a child (who) cries'

(b). (NON)POSSD

Modifier

fëh - dohra met - t
 pig - NONPOSSD woman - 3SF
 'a woman without (a) pig(s)'

The verbal form of the (Non)Possessed Modifier functions as a relative clause, according to Keenan and Comrie's (1977:63-4) semantic definition. The verbal (Non)Possessed Modifier may, therefore, be referred to as the (Non)Possessed Relative Clause. This relative clause is similar in some ways to the Purpose Relative Clause. That is, 1) the verb is in a nonfinite form, and 2) noun incorporation follows the same pattern. The two constructions differ in other ways, namely, 1) the subordinating clitics and their semantic functions are distinct, 2) the (Non)Possessed

Modifier relativizes only on subject and object positions (cf. example 43), 3) the noun phrases within the (Non)Possessed Modifier have not been observed to be marked with the genitive.

- 43(a). (NON) POSSD REL CL
- Subj
- ϕ fëh- (r) was - dohra yima - r
- ϕ pig - (3SM) pierce - NON.POSSD man - 3SM
- 'a man (who) {has not speared a pig}'
{does not spear pigs}'

- (b). (NON) POSSD REL CL
- In.Obj
- ϕ yimam was - et fëh - r
- ϕ men pierce - POSSD pig - 3SM
- 'a pig speared by men'

- (c). (NON) POSSD REL CL
- Out.Obj
- ϕ yifemr yënr hay - et fëh - r
- ϕ father child give - POSSD pig - 3SM
- 'a pig (which) [father] gave (to) [a child]'
[a child] [father]'

4) POSSESSIVE PHRASE

We will now consider the final exponent of the Outer Modifier, the Possessive Phrase. A first approximation of the Possessive Phrase construction is given in Table 45.

Table 45: Possessive Phrase

Functions	+ Related Head	+ Possessive
exponents	NP	-(h)o ~ -oh (genitive marker)

The Related Head function of the Possessive Phrase identifies the possessor of an item. It is manifested by a noun phrase which is terminated with a PNG marker. The possessive function relates the axis noun phrase to another noun phrase as the possessor of that noun phrase.

There are some irregularities in the Possessive Phrase which can be illustrated by charting the distribution of the Genitive markers.

Table 46: Genitive Allomorphs

	Singular	Dual	Plural
Person: 1.	-(h)o	-oh ~ -(h)o	-oh
2.	-(h)o	-oh ~ -(h)o	-oh
3.	-(h)o	-(h)o	NP Base-r-oh (~ NP Base-m-ho)

The symbol ~ indicates free variation of allomorphs in the same environment.

The -ho form with third-person plural forms is bracketed since it was found to occur alternating with the -oh form only in the idiolect of an older generation speaker (over 50 years of age). For that reason the -ho form in the plural column can be taken to be exceptional and will be ignored for the moment; the form is significant from a historical perspective.

The analysis of possessive markers as given in Table 45 is kept relatively simple at the expense of regularity in the phrase terminator (Person-Number marker) of the third-person-plural form. The common third-person-plural marker is -m, as shown in the form in parentheses on Table 46. In all but the oldest speakers' speech, this marker is replaced by -r in third person plural forms co-occurring with the possessive marker. Compare the possessive and simple forms of '*fish*' in the following paradigm.

SINGULAR

	<u>masculine</u>	<u>feminine</u>	<u>dual</u>	<u>plural</u>
simple:	yira-r	yira-t	yira-f	yira-m
possessive:	yira-r-ho	yira-t-ho	yira-f-ho	yira-r-oh

Note that *yira-m-oh '*fishes*' is ungrammatical.

By this analysis another person marker needs to be added to the inventory of noun phrase terminators (cf. Table 36), viz., -r 'third person'. This new terminator only occurs with third-

person-plural-possessive forms. Whereas other terminators indicate person, number, (and gender in third singular forms) this new terminator indicates only the category of person. The component of plurality is conveyed by the possessive marker -oh. These meanings are illustrated by the forms in example 44.

44(a). POSS PH
┌───────────┐
 yira - r - ho moh - t
fish - 3SM - GEN *hole* - 3SF
 'the fish's hole'

(b). POSS PH
┌───────────┐
 yira - r - oh moh - t
fish - 3 GEN.PL *hole* - 3SF
 'the fishes' hole'

From the distribution of the possessive allomorphs on Table 46, it is apparent that plural forms have become fixed with the -oh alternate. While the -oh alternate occurs elsewhere as well, it is evidently becoming associated with the meaning 'plural', and that association has become established in third-person forms.

An alternative synchronic solution would analyse -roh as a single third-person-plural possessive morpheme. The result of that analysis would be that the noun phrase terminator -m would not co-occur with the third-person-plural possessive morpheme whereas every other person and number form of the noun phrase base is terminated before the Possessive marker is suffixed to it. The present analysis is preferred on the basis of the greater regularity in the form of the phrase to which the GEN is suffixed.

With the present analysis the specification of the Possessive Phrase (Table 45) can now be refined according to Table 47.

Table 47: Possessive Phrase (Revised)

Functions	+ Related Head	+ Possessive
exponents	noun phrase	-oh 'genitive plural' -(h)o 'genitive'

The -(h)o 'genitive' morpheme must be further specified by a morphemic rule:

$$-(h)o \rightarrow \begin{cases} -(h)o \sim oh / \begin{Bmatrix} 1.s \\ 1.d \\ 2.s \end{Bmatrix} \\ -(h)o / \text{elsewhere} \end{cases}$$

That is, following first person-singular and dual, and second-person-singular forms, the alternating forms -(h)o and oh occur. The -(h)o alternates occur elsewhere. Where -oh occurs in underlying forms (with plural forms), there is no variation in the form of the genitive.

e. INNER MODIFIER FUNCTION OF THE NOUN PHRASE

The next function slot of the noun phrase to be discussed is the Inner Modifier. It is manifested by Adjective Phrases and Interrogative roots which may be permuted and/or repeated as described below.

Permutability

The Inner Modifier slot may theoretically permute to any position within the NP Base. There is a tendency, however, to maintain its pre-head position (per Table 38) especially with certain collocations. Collocations with certain exponents of the Head slot are restricted to the Modifier + Head order. A detailed study of the interaction of collocation and permutation restrictions has not been done for this research. Limited documentation seems to indicate, however, that permutation potentials within the noun phrase are governed at least partially by semantic factors. For example, the descriptive adjective *habhi* 'small' may permute to the post-head position with inherently small objects (according to some general standard) which manifest the Head position, e.g., knife, man, tree, pig, canoe. The same adjective may not permute to that position with inherently large objects such as mountain, village, river, ground, swamp.

Repeatability

The Inner Modifier function slot is repeatable. Almost any

ordering among a sequence of adjectives is allowable. Restrictions operate to generally disallow more than one adjective to follow the Head noun. For example,

- 45(a). ind bro dboryoh krta graf fëh - r
 DEM *big good black wild pig* - 3SM
- (b). ind dboryoh bro graf fëh krta - r
 DEM *good big wild pig black* - 3SM
- (c). *ind habhi fëh krta graf - r
 DEM *small pig black wild* - 3SM

Some collocations of two adjectives following the Head have been observed.

46. ind graf fëh dboryoh bro - r
 DEM *wild pig good big* - 3SM

Exponents of the Inner Modifier

Exponents of the Inner Modifier function include simple descriptive adjectives, Adjective Phrase constructions, and certain Interrogative roots. For a discussion of simple adjectives, refer to section III.C.3.

Adjective Phrase

The Adjective Phrase is diagrammatically presented in Table 48.

Table 48: Adjective Phrase

Functions	+ Nucleus	± Scaler ¹
exponents	adjective	Scaler Adverb Comparative Specifier Enclitic Diminutive Specifier Enclitic

Note: masat 'very' precedes the adjective.

¹The term 'scaler' is taken from Fries (1970:75).

Permutability

The function slots within the Adjective Phrase do not permute. The ordering of elements within the adjective construction is unusual in light of Greenberg's (1963:88) 21st universal:

If some or all adverbs follow the adjective they modify, then the language is one in which the qualifying adjective follows the noun and the verb precedes its nominal object as the dominant order.

The verb in Alambhak does not precede its nominal object as the dominant order (it is an S O V language with several typological features of S O V languages); in the dominant order the qualifying adjective in the noun phrase does not follow the noun. Therefore, adverbial constituents should precede the adjective in adjective phrases according to Greenberg's universal. One explanation for this digression in Alambhak from the general pattern is that the predominant adverbials are enclitics and therefore either follow the adjective or head noun of the phrase. Other adverbials, which are apparently less tightly bound phonologically, follow the adjective by analogy with the enclitic adverbials.

The adjective construction may be discontinuous, with certain exponential combinations. That is, certain exponents of the Scaler slot may occur suffixed to the Head of the Noun Phrase. The discontinuous form is actually preferred with certain combinations. -ef 'moderately' always occurs in the post-head position unless in a derived form with the -et 'possessed' suffix. Note the examples in 47.

47(a). $\overbrace{\text{ADJ} \quad \text{PH}}^{\text{-----}}$
tat m+ y - mif - t
hard tree - very - 3SF
'very hard tree'

(b). $\overbrace{\text{ADJ} \quad \text{PH}}$
tat m+ y - ef - t
hard tree - mod - 3SF
'a moderately hard tree'

- (c). $\overbrace{\text{ADJ PH}}$
 dboryoh - mif fëh - r
good - very pig - 3SM
'very good pig'
- (d). $\overbrace{\text{(Non)possd. Mod.}}$
 $\overbrace{\text{ADJ PH}}$
 dboryoh - ef - et doh - t
good - mod - POSSD canoe - 3SF
'moderately good canoe'

From the limited amount of data available, adjective phrases with "human propensity" adjectives consistently retain a non-discontinuous form. Those phrases with "value" adjectives consistently allow either a discontinuous or non-discontinuous form. The data are too limited to make any firm generalizations.

Repeatability

The Scaler slot may be repeated within the Adjective Phrase, e.g.,

48. $\overbrace{\text{Adjective PH}}$
 habhi - en - mif yira - r
small - DIM - very fish - 3SM
'very small small fish'

Exponents of the Adjective Phrase

For a discussion of exponents of the Nucleus of the adjective construction, refer to section III.C.3. Scaler Adverbs and Comparative and Diminutive Specifier enclitics manifest the Scaler function which functions to modify the adjective by specifying the extent or degree of the adjective along a relative scale.

Scaler Adverbs, which are very few in number, tend to be highly restricted by selectional features as follows:

- yinmot *'moderately (of size only)'*
 kashë *'moderately (of size only with "large")'*
 yinmayr *'very (of size only with "large")'*
 masat *'very, much'*

These adverbs are illustrated in example 49 below.

- 49(a). $\overbrace{\text{habhi yinmot}}^{\text{ADJ PH}} \text{ miy-t}$ 'moderately small tree'
small moderate tree
- (b). $\overbrace{\text{bro yinmot}} \text{ miy-t}$ 'moderately large tree'
big moderate tree
- (c). $\overbrace{\text{bro kashë}} \text{ miy-t}$ 'moderately big tree'
big moderate tree
- (d). $\overbrace{* \text{habhi kashë}} \text{ miy-t}$
small moderate tree
- (e). $\overbrace{\text{bro yinmayr}} \text{ miy-t}$ 'huge tree'
big very tree
- (f). $\overbrace{\text{masat bro yima-r}} \text{ miy-t}$ 'very big man'
very big man

The Comparative and Diminutive Specifier enclitics are the same as those which occur manifesting a noun stem function slot (cf. Table 33). They are listed together here:

- mif 'very'
- ef 'moderately'
- en 'diminutive'

This analysis distinguishes between the two functions of these morphemes (Scaler function of an Adjective Phrase and the Derivation function of the noun stem). Structural ambiguity may occur, however; for example when an Adjective Phrase is discontinuous, the Comparative Specifier follows the Head noun, occupying the same linear position as the derivational suffix of the noun stem. This analysis captures the fact that there is a clear semantic contrast between the two manifestations of these morphemes. Example 47 illustrates the meanings of some of the suffixes when manifesting the Scale slot of the adjective construction. The two functions of the Diminutive clitic are

contrasted in example 50 below. The functions of the Comparative clitics may be contrasted by comparing their occurrences in Adjective Phrases (example 47) with their occurrences in noun stem constructions (cf. example 9 p.). The suffix -en is glossed the same in both the noun stem and the adjective phrase: note the contrast, however, in example 50.

- 50 (a). $\overbrace{\text{ADJ PH}}$
 habhi - en yawy - r 'small small dog'
 small - DIM dog - 3SM
- (b). $\overbrace{\text{N Stem}}$
 yawy - en - r 'puppy'
 dog - DIM - 3SM

With a Scaler function the Diminutive clitic adds a specification to the adjective in the Adjective Phrase (a). In a derivational function (b), the same suffix derives a new lexical item from the noun root in the Core of the noun stem.

Interrogative Roots

Certain Interrogative roots, viz., fitëh 'which' and tamëh 'what (substantive)' may manifest the Inner Modifier function of the noun phrase. These roots are employed to ask for a further specification of the head noun. Fitëh 'which' is the most commonly occurring Interrogative manifesting the Inner Modifier function. The equivalent of English 'when' is expressed in Alamblak with fitëh modifying the head noun yha as in example 51.

51. $\overbrace{\text{In.Mod}}$ $\overbrace{\text{Head}}$
 fitëh yha - r 'when'
 which day - 3SM

f. HEAD FUNCTION SLOT OF THE NOUN PHRASE

The next function slot to be discussed is the Head function of the noun phrase. The function of exponents of the Head is to identify the basic class of entities or the entity being referred to by the phrase.

Permutability

Relative ordering of the Head slot within the noun phrase has now been effectively delineated by discussion concerning the relatively free permutability of the other noun phrase slots. The Head position always precedes enclitic slots as listed on Table 38. Otherwise the Head position may occur anywhere in the phrase, although it is rare to find the Head preceding Determiner₁.

Exponents of the Head Function

Common noun roots, noun stems, Interrogative roots, Qualifier Nominal Bases, Composite Nominal Bases, and Nominal Clauses manifest the Head function of the noun phrase. Noun stems have been discussed in section IV.B. Examples of Interrogative roots manifesting the Head of a noun phrase are given in III.C.5. Compound forms have not been included as exponents of the Head; these will be discussed following the presentation of the various subtypes of the Nominal Bases.

1) QUALIFIER AND COMPOSITE NOMINAL BASES

Both the Qualifier and Composite Nominal Bases may be classified according to the functional relationships which obtain between noun + noun or noun + verb roots. The subtypes and semantic interpretations of each are summarized in Tables 49 and 50.

Table 49: Qualifier Nominal Base

Functions	+ Modifier	+ Head
exponents	noun root verb root	noun root

There are two semantic interpretations of the relationship between the Modifier and the Head of the Qualifier Nominal Base depending on the individual exponents of each function slot. Example 52 illustrates the first relationship, in which the noun root Modifier identifies the substantive which is affected by the typical function of the exponent of the Head.

52. nua rika - t
sago.pancake palm.sheath - 3SF
'palm sheath container for sago'

The second semantic relationship obtains between either noun or verb roots functioning as Modifiers and the Head noun. Examples in 53 illustrate this relationship in which the exponent of the Modifier function qualifies the generic head noun in terms of type or function.

- 53(a). miy tha - t 'bark'
tree skin - 3SF
- (b). hambray tha - t 'clothing'
clothe skin - 3SF

Table 50: Composite Nominal Base

Functions	+ Head ₁	+ Head ₂
exponents	$\left[\begin{array}{l} \left\{ \begin{array}{l} \text{noun root} \\ \text{Proper Name Base} \end{array} \right\} \\ \text{noun root} \end{array} \right]$	$\left[\begin{array}{l} \text{Composite enclitic} \\ \left\{ \begin{array}{l} \text{noun root} \\ \text{verb root} \end{array} \right\} \end{array} \right]$

There are three semantic interpretations of the relationship between the two Heads of the Composite Nominal Base depending upon the individual exponents of each function slot.

In the first relationship between Head₁ and Head₂ a noun root or Proper Name Base identifies one member of a composite and the Composite enclitic identifies the type of composite it is. Example 54 illustrates this type of semantic relationship.

- 54(a). yima sawoh - f
man childless.married.couple - 3D
'man (and his) wife'
- (b). met ñimeh - f
woman parent.and.only.child - 3D
'woman (and her) only child'

The second type of relationship holds between two Noun roots. Exponents of both Heads identify a member of a composite. Example 55 illustrates this type of composite.

55. yifa mima - f 'parents'
father mother - 3D

The third type of relationship holds between a Noun root and a Verb root. The Noun root of Head₁ identifies the source of the substantive and the Verb root of Head₂ identifies the process involved in manufacturing it. Example 56 illustrates this type of construction.

56. kipa tnda - t 'woven wall panel'
sago.stem.strip weave - 3SF

The Qualifier and Composite Nominal Bases are nearly equivalent to compound stems. Described as they are as phrase base constructions, it is implied that they are the result of productive syntactic processes. Their distribution, manifesting the Head function of a Noun Phrase, implies that they are formed by highly restricted syntactic processes, and they include a range of close-knit constructions which formally embraces compound-like structures.

Precise definitions of notions of 'compound word' or 'compound stem' are difficult to find. Criteria have been used from phonology, morphology, syntax, and semantics, and when taken together, the result is often contradictory (cf. the discussion Matthews 1974: chapter IX). Fries (1970:113) speaks of a compound as the end result of a compounding process. "Varying degrees of cohesion" characterise constructions along a continuum from noun phrase to compound noun. He analyses these quasi-compounds as phrases which manifest the Head function of the noun phrase. In this way he attempts to characterise the bulk of the middle area of the continuum as constructions which are in some ways more cohesive and restricted than noun phrases but which are not yet felt to be compound words. He claims that the point at which a construction merits a place in the lexicon as a compound cannot always be

consistently grammatically defined. "If that same sequence recurs as the filler of the head frequently enough, speakers of the language begin to think of it as a unit ... One is left, ultimately, with the speaker's intuition..." (Fries 1970:113) Fries' approach will serve as a model here for Alambalak. Since the analysis thus far has claimed that there is a mixture of word-like and phrase-like features in the grammatical levels in Alambalak, special treatment of constituents just because they are neither exactly words nor phrases should presumably not be necessary. In other words, why not add another modifier slot which is restricted in various ways within the noun phrase? The answer is simply that Qualifier and Composite Nominal Bases are embedded as a single unit because they operate as single constituents within the phrase-base, and not because they are more word-like than phrase-like. The crucial question is, why are they embedded as phrase-bases rather than compound stems? That question can only be answered by considering the internal structure of Qualifier and Composite Nominal Bases.

Before turning to phrase-like vs. stem-like characteristics, we will discuss how these constructions operate as a unit within the noun phrase. The argument lies in the anaphoric function of the noun phrase for maintaining participant identification in a discourse (cf. Grimes 1975:48-9). As a referent becomes prominent in a discourse, reference to that participant becomes more general, and noun phrases with less and less information content may be employed. This is a primary function of a head-less noun phrase (e.g., example 57(c) below). A participant may initially be identified by a phrase such as example 57(a); subsequent references to the same participant might leave a Modifier and/or Head unspecified as in examples (b) and (c).

- 57(a). ind bro yima - r
 DEM *big man* - 3SM
- (b). ind yima - r
 DEM *man* - 3SM
- (c). ind bro - r
 DEM *big (one)* - 3SM

There is variety in the options for leaving information unspecified with Qualifier and Composite Nominal Constructions. The freedom to delete either one of the two constituents of these nominal constructions is never as complete as it is with modifier and head slots of a noun phrase, however (e.g., examples 57(b) and (c)).

Examples 58 and 59 exhibit Qualifier Nominal Bases as exponents of the Head function.

58(a). $\overbrace{\text{ind gën toa}}^{\text{Head}} - t$
DEM *banana (leaf)* - 3SF

(b). $\overbrace{\text{ind toa}}^{\text{Head}} - t$
DEM *(leaf)* - 3SF

(c). $\overbrace{\text{**ind gën}}^{\text{Head}} - t$
DEM *banana* - 3SF

59(a). $\overbrace{\text{ind gëk toa}}^{\text{Head}} - t$
DEM *mussel (leaf/shell)* - 3SF

(b). $\overbrace{\text{**ind toa}}^{\text{Head}} - t$
DEM *(leaf)* - 3SF

(c). $\overbrace{\text{**ind gëk}}^{\text{Head}} - t$
DEM *mussel* - 3SF

Examples 58(c) and 59(b) and (c) are double starred (**), not because they are ungrammatical, but rather because they are not reduced references to the referents which are identified by their corresponding (a) forms. In their present form they refer to quite different objects than the (a) forms do. In the (c) variations, the obligatory Head of the Nominal Base is not present and therefore the extant noun is interpreted as an exponent of the Head of a general noun phrase and therefore refers to a different referent than was identified by the (a) forms. They are not head-

less noun phrases with a nominal modifier parallel to example 57(c) with an adjectival modifier. This does not mean that examples 58 and 59 cannot occur as head-less noun phrases; *ind-t 'that (one)'* is an appropriate head-less form for all of the examples above. When the Head is unspecified, the adjunct of the embedded phrase must be left unspecified since it is part of the Head and not a separate modifier constituent of the noun phrase.

Composite Nominal Bases are must less productive and thus more restricted, as examples 60-62 illustrate.

- 60(a). *ind met ñimeh - f*
 DEM *woman parent.child - 3D*
- (b). *ind ñimeh - f*
 DEM *parent.child - 3D*
- (c). ***ind met - f*
 DEM *woman - 3D*
- 61(a). *ind yifa mima - f*
 DEM *father mother - 3D (parents)*
- (b). **ind mima - f*
 DEM *mother - 3D*
- (c). **ind yifa - f*
 DEM *father - 3D*
- 62(a). *ind kipa tnda - t 'the woven panel'*
 DEM *sago.stem.strip weave - 3SF*
- (b). **ind tnda - t*
 DEM *weave - 3SF*
- (c). ***ind kipa - t*
 DEM *sago.stem.strip - 3SF*

Phrases in examples 60 and 61 involve two Heads whose exponents manifest members of a composite concept. One of the Heads may not be left unspecified independently of the other (61(b) and (c) and 62(b) are ungrammatical, and 62(c) identifies a different referent).

From the foregoing discussion, the Qualifier and Composite constructions are established as constituents of a noun phrase.

They are analysed as phrases which function as the Head of a noun phrase. The thesis under consideration is that such closely-knit phrases display more cohesion than a general noun phrase while manifesting certain general syntactic characteristics not fundamental to 'words'.

All Qualifier and Composite constructions are candidates for compound word status for the following reasons: 1) they function as unit manifesting the Head of a noun phrase; 2) there is complete rigidity of ordering of the constituents (gök-toa-t '*musshell shell*' versus *toa-gök-t), whereas most adjectives may follow as well as precede the head noun of the noun phrase; 3) constituents are not interruptible (such as by expansion of the adjunct) e.g., *gök-mif-toa-t *musshell-truly-shell-3SF*); 4) they manifest a high degree of phonological cohesiveness (cf. II.E.2. on the elision of transition vocoids and cf. X.D.2. concerning word-medial prenasalization).

In general, the Qualifier Nominal Constructions are more phrase-like than compound structures in the following ways: 1) they manifest phrase-like syntactic and semantic relationships between their constituents (qualifying adjunct plus Head); 2) there is high versatility in the occurrence of constituents (relatively productive) e.g., the Head constituent may co-occur with many qualifying exponents of the Modifier slot, e.g.,

<u>Modifier:</u>	<u>N Root/VB Root</u>	<u>Head:</u>	<u>N Root</u>
yira	'fish'	waj	(a kind of grass)
fëh	'pig'	gond	'ginger'
kfoh	'hunt'		
yay	'eat'		
noh	'die'		

Thus a yira waj-r (*fish grass-3SM*) is the type of waj grass which is used in magical encantations to attract fish; Yay waj-r (*eat grass-3SM*) is edible, but noh waj-r (*die grass-3SM*) is used as poison.

Composite Nominal constructions approach the status of compounds more than Qualifier Nominal Bases in that they are less productive. Native speaker intuition is the only data which would enable one to determine when, through continued use, the

concept conveyed by a composite phrase changes from a combination of the two constituents to a single lexical unit. The analysis and enumeration of compounds is left aside here as a function of the lexicon.¹

2) NOMINALIZED CLAUSES

The final class of exponents of the Head position of the noun phrase is the class of nominalized clauses. The structure of the Nominalized Clause is described in Table 51. As the head of a noun phrase, Nominal clauses host regular noun phrase terminators indicating number in the third person.

Table 51: Nominalized Clause

Functions	± Periphery	+/(± Subj	± In.Obj	± Out.Obj)	+ Pred
exponents	(cf. clause periph. in chapter VI)	[NP]	[NP]	[{ GEN NP } NP { NP Base }]	Nom. verb stem
		[NP GEN NP]	[GEN NP NP]	[NP Base NP Base]	
		[NP Base { GEN NP } NP]	[- NP Base]	[- -]	

¹Example 63 represents a clear case of a compound form.

63. gi - naf - t 'wild.sago.palm-grub-3SF'

It seems to derive from the Qualifier Nominal Base construction with 'wild sago palm' qualifying (subclassifying) the Head 'grub'.

64. miy - gi - naf - t 'tree-w.s. palm-grub-3SF'

In example 64 'sago grub' manifests the Head position of another Qualifier Nominal Base construction. In that example the 'tree grub' is not a variety of a 'sago grub' which is itself a variety of 'grub'. 'Sago grub' (ex. 63) is now the generic term for grub. It appears to have been a hyponym of naft 'grub' historically, but since it is the culturally most prominent type of grub, it has now become the generic term. Ginaf-t, then, means 'grub', being the wild sago grub unless otherwise specified. Once the qualifier construction (ex. 63) acquired the status of compound, it became the term to manifest the head of the qualifier construction in 64, instead of the old generic naf.

The Predicate Function of the Nominalized Clause

The exponents of the predicate function are nominalized verbs which are composed of a verb stem (cf. Table 70) plus the Nominalizer suffix -nef. The predicate, then, is nonfinite and lacks Actor and Undergoer pronominal suffixes.

Nuclear NP Functions of the Nominalized Clause

The grammatical functions and semantic roles of the Nuclear NP's in the Nominalized Clause are more difficult to identify than they are for other embedded clauses. Subjects of one-place predicates maybe incorporated; subjects of multiplace predicates, however, cannot be incorporated and thus contrast with the Inner and Outer Object under certain circumstances. Genitivization in Nominal clauses digresses from the general "ergative" pattern of other embedded clauses (cf. IX.B.) in that either the subject or the object of a two-place predicate may take the genitive form.

Examples 65(a) and (b) manifest the genitive form of the subject and example (c) has genitivized the Inner Object.

65(a).

	Nominal CL
	Subj
yifemr pëthawonmëanr	nan - ho yi - nef - t
<i>father talk.try.I.him</i>	<i>I - GEN go - NOM - 3SF</i>
	<i>'I tried talking to Father (about) my going.'</i>

(b).

	Nominal CL
	Subj
yifem-r pëthawonmëanr	rër - ho yak - ni - nef - t na
<i>father talk.try.I.him</i>	<i>he - GEN get - go - NOM - 3SF I</i>
	<i>'I tried talking to Father (about) his taking me.'</i>

(c).

	Nominal CL
	In.Obj
akfërafëwahn	yima-m bupa - r-oh yak-nef-t
<i>do.not.talk.forbid.you</i>	<i>man -3PL water-3-GEN.PL get-NOM-3SF</i>
	<i>'Don't forbid the men('s) getting of water.'</i>

A peripheral semantic role (typically manifested as an Oblique NP) takes the genitive form as an Inner Object in example 66.

66.

	Nominal CL
	In.Obj (Allative)
kfëyfifakrhwanr	skur - r - ho yi - nef - t
<i>talk. entice. will. I. him</i>	<i>school-3SM-GEN go - NOM - 3SF</i>
	<i>'I will entice him (about) going (to) school.'</i>

g. POST-HEAD FUNCTIONS OF THE NOUN PHRASE

Post-head functions of the noun phrase include the Modifier clitic, Exhaustive Quantifier, and Limiter and typically occur in that order. These functions are not always clearly differentiated functionally from derivational suffixes of the noun stem (cf. Table 33). In general, however, these phrase-level clitics function as adjuncts to the Head which further specify or subclassify the Head rather than deriving a distinct lexical item in conjunction with the Head. Structurally there is greater flexibility in linear ordering and collocations with the post-head functions than there is with derivational suffixes.

1) CLITIC MODIFIER FUNCTION OF THE NOUN PHRASERepeatability and Permutability

The Clitic Modifier function slot may be repeated although it rarely is in common speech. Its linear ordering is fixed with respect to the Exhaustive Quantifier and must follow the Head of the phrase but need not be juxtaposed to the Head slot.

Exponents

The exponents of the Clitic Modifier function are, as listed in Table 38, -mku 'portion of', -ñimbîha 'portion (length) of', and -sk 'deteriorated'.

Example 67 illustrates a noun phrase with a Clitic Modifier.

67. kuñ - sk - t 'deteriorated house'
house - deter. - 3SF

2) EXHAUSTIVE QUANTIFIER FUNCTION OF THE NOUN PHRASE

The Exhaustive Quantifier is manifested by -buga 'all' and it is fixed in order with respect to the Clitic Modifier.

68. kuñ - sk buga - m '*all of the deteriorated houses*'
 house - deter. - all - 3PL

3) LIMITER FUNCTION OF THE NOUN PHRASE

The Limiter function is manifested by -rpa '*only*' (derived from the numeral '*one*'). The limiter may permute to most positions within the noun phrase although its position according to Table 38 is the most common. No variation of scope occurs with variations in linear ordering; phrases in example 69 have the same meaning although different stylistic effects may result.

- 69(a). bro - rpa kuñ - sk - m
 big - only house - deter - 3PL
 '*only big deteriorated houses*'
- (b). bro kuñ - rpa - sk - m
 big house - only - deter - 3PL
 '*only big deteriorated houses*'
- (c). bro kuñ - sk - rpa - m
 big house - deter - only - 3PL
 '*only big deteriorated houses*'

D. MISCELLANEOUS PHRASE CONSTRUCTIONS AND DISCUSSION

1. CONSTRUCTIONS WITH PROPER NAMES

Proper names occur in Composite Nominal Base constructions. They may also manifest a modifier function in the noun phrase; in that function a proper name always follows the Head position, e.g.,

70.

Head		Mod: proper n.		Term	
kmi		Yamkopin		- t	<i>'Amongabi village'</i>
<i>village (Amongabi)</i>				- 3SF	

2. CONSTRUCTIONS WITH PRONOUNS

Constructions with pronouns deviate from the general noun phrase pattern in that the Quantifier slot follows a pronoun Head.

Table 52: Pronoun Phrase Base

Functions	± Determiner	+ Head	± Quantifier	± Limiter
exponents	DEM	Pronoun base	Emphatic/ Reflexive Pronoun root	-rpa 'only'

An important observation about pronouns is that because of their distribution within a phrase, they appear to be unanalysable wholes.

- 71(a). rēt - rpa - t¹ 'only she'
she - only - 3SF
- (b). rēt tu - t 'she herself'
she E/R - 3SF
- (c). rēt tu - rpa - t 'she (and) only she herself'
she E/R - only - 3.S.F

In example 71 the full pronoun form manifests the Head position of the phrase. All other forms of non-verbal phrases require non-terminated forms in that position. To make Pronoun Phrases consistent with that pattern, Pronouns would have to be considered unanalysable (non-terminated).

On the other hand, a Pronoun may be a minimal manifestation of a phrase, e.g.,

72. rēt 'she/her'

If the Pronoun in 72 is unanalysable, then it breaks the general noun phrase pattern since it manifests a phrase without a terminator.

There is other evidence relevant to the analysis of pronouns. Copulative constructions are formed by suffixing the Copula -e to a base form. The base form of pronouns may be identified,

¹Examples in 71 are single phrases rather than phrases followed by appositional phrases. There is phonological evidence to suggest this. The final nasal of certain pronouns elides if followed by an unbound morpheme or silence. Thus, na yawr wiknamëa 'I dog I.bought' exhibits a sequence of two noun phrases. In nan-rpa-a wiknamëanr 'I-only-I I.bought.him' nan-rpa-a is one phrase with the non-deleted n intact in the pronoun form.

then, by examining copulative forms of pronouns.

Third person forms (Indirect Reference Pronouns) of the paradigm are analysed differently than the other pronouns by this test, e.g.,

<u>PRONOUN</u>		<u>COPULATIVE FORM</u>			
		Base	Copula	Terminator	
1.	na(n) 'I/me'	nan	- e	- a(n)	'(it) is I'
	në(n) 'we two'	nën-	e	- në(n)	' " " we two'
	nëm 'we'	nëm	- e	- nëm	' " " we'
2.	ni(n) 'you'	nin	- e	(n)	' " " you'
	nifin 'you two'	nifin	- e	- fin	' " " you 2'
	nikë(m) 'you'	nikëm	- e	- kë(m)	' " " you'
3.	rër 'he'	rë	- e	- r	' " " he'
	rët 'she'	rë	- e	- t	' " " she'
	rëf 'they two'	rë	- e	- f	' " " they'
	rëm 'they'	rë	- e	- m	' " " they'

Full first- and second-person forms of the paradigm manifest the Base of the Copulative construction. A reduced base form (rë) is used in the case of third-person forms, however. Third-person pronouns are analysable into Base + Terminator, whereas other pronouns are not analysable, at least in the context of the Copulative construction. The final consonant of third-person pronouns has been re-interpreted to be a Person-Number-Gender Terminator by analogy with nominals which are also third-person in form. First- and second-person pronouns have not undergone any such reanalysis.

Whatever the exact reason for the disparate analysis by Alamblak speakers of different pronoun forms, what is perhaps both more interesting and more of a synchronic problem is the fact that in some contexts third-person pronouns are treated the same as first- and second-person pronouns.

At present it seems that third-person pronouns have five base forms which occur in different grammatical environments. Rë 'third person' occurs in Copulative constructions; rër, rët, rëf, and rëm whose final consonant is the same form as the corresponding PNG markers, occur elsewhere. The Pronoun Phrase can be described as hosting terminations in the same way nominal Phrases

do with the additional rule that restricts Person-Number-Gender markers from occurring immediately following a Pronoun Base.

We would like for our description to explain why this special rule, and the special base forms of third-person pronouns, occur in the grammar. The historical development of Person-Number-Gender markers will be of significance relating to this question. We will not be able to discuss the origin of Person-Number-Gender markers in Alamlak in this work, however.

3. CO-ORDINATE NOUN PHRASES

There are two types of co-ordinate noun phrases, conjoining and alternating. These are structurally described in Tables 53 and 54.

Table 53: Conjoining Co-ordinate NP

Functions	+ Head ₁	+ Link	± (+ Head + Link) ₀	+ Head	± Link
exponents	NP	-i	NP	-e	NP
	PNP	'CONJ'	PNP	'CONJ'	PNP

The Conjoining Co-ordinate NP consists of two or more Head functions conjoined by linking devices which are obligatory on all but the final Head. The typical linkages are the co-ordinate enclitics listed in Table 53. Alternatively they may be replaced by a pause juncture.

73. yën - r - i yën - t - e mîmem - t (- e)
child - 3SM - CONJ *child* - 3SF - CONJ *mother* - 3SF (- CONJ)
 'a boy and a girl and mother'

The linking morphemes function to conjoin two or more Heads which are equivalent in their grammatical and semantic roles. By grammatical role we mean roles such as Subject, and by semantic roles we mean case roles such as Agent, Patient, etc. The notion of subject is analysed into the more primitive features of perspective and referentiality in section VII.C.3. Co-ordinate structures function as a unit with no one member singled out as being more in perspective or more referentially prominent than the other members of the construction.

A reflex of the equivalent functional status of the members of a co-ordinate structure is the fact that a single member cannot be relativized on.

74. GEN REL CL
 * \emptyset yën -r -i yën -t -e yi-më mimëm -t
 \emptyset child-3SM-CONJ child-3SF-CONJ go-R.PST mother-3SF
 *'The mother (who) and the boys and the girl went'

The co-ordinating conjunction contrasts in function with the conjunction of a comitative construction. The Comitative conjunction conjoins members which are equivalent in semantic role but not equivalent in grammatical roles. The comitative construction is discussed more fully in section VII.C.3.

Table 54: Alternating Co-ordinate NP

Functions	+ Head ₁	+ Link	±(+Head + Link) _o	+ Head
intonation	↗	—┐	↗	↘
exponents	NP	-(n)o 'or'	NP	-(n)o 'or'

Note: the initial n of the conjunction is manifested following vowels and is deleted following consonants.

The internal intonational pattern of an Alternating Co-ordinate NP is the same as that which is manifested in sentences with subordinate clauses which are subordinated with the linking morpheme -(n)e (cf. VIII.C).

- 75(a). yuananë -no yhof nayay - rah - r
two.days.removed-or one.day.removed come - FUT - 3SM
 'He will come in two days or tomorrow.'
- (b). yinem - r - o nëmem - r wita -më - r
child - 3SM - or younger.sibling-3SM enter.up-R.PST-3SM
 'The child or younger sibling entered (it).'

The linking morpheme of the Alternating Co-ordinate NP functions to conjoin two or more heads which are equivalent in

grammatical and semantic roles. The conjunctions of both the Conjoining and the Alternating Co-ordinate NP function in the same way. They contrast only in meaning.

Chapter V

VERBAL CONSTRUCTIONS

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Chapter V

INDEPENDENT VERBAL CONSTRUCTIONS

A. INTRODUCTION

In the last chapter, the topic of grammatical levels was discussed within the framework of nominal constructions. The conclusion reached there was that the definitions of traditional stem, word, and phrase levels do not sufficiently differentiate the Alambak levels of stem, phrase-base, and phrase. Grammatical levels in Alambak are characterized by a mixture of features which define the traditional levels.

That discussion of grammatical levels will not be repeated here, but the conclusions reached there generally apply equally well to verbal constructions. Structurally the verb phrase is more word-like than the noun phrase is. For example, the internal structures of all verbal constructions are more rigidly ordered than those of nominal constructions. Some variation in the ordering of elements does occur, but a change of meaning generally results from the reordering, e.g., *hay* is a causative as a prefix but a benefactive as a suffix. Furthermore, typical word inflections bound the verb phrase at both ends.

On the other hand, the verb phrase is definitely phrase-like in terms of its expandability. That is, its constituent parts are interruptible by modifying-type aspects and the verb stem may incorporate several roots including noun, adjective, and Time word roots. Semantically the verb can be as complex as serial verb constructions or complex clause or sentence constructions in other languages.

The borders of stem, phrase-base, and phrase are perhaps even less discrete with verbal constructions than they are with nominals. This feature will be discussed in more detail in the section dealing with expanded stems. Distributional factors, nonetheless, help to establish levels of stem, phrase-base, and phrase. These levels are valuable as convenient descriptive devices as long as their use does not obscure the nature of the continuum of which they form a part.

This chapter deals primarily with finite verbal forms of which expansions of the stem compose the greater part of the discussion. To begin with, the basic structure of the verb phrase is described, followed by a discussion of a minimal base and phrasal clitics which give the base its complete independent form. Following the discussion of the basic features of the verb, more complex serialized constructions will be discussed in section B.3. Nonfinite Copular and Existential verbs are discussed at the conclusion of the chapter. Other nonfinite verbal forms are described in other sections of the grammar where they manifest predicate functions of dependent clauses.

B. FINITE VERB PHRASE

A finite verb phrase is composed of a base plus terminal and other peripheral clitics as portrayed in Table 55.

Table 55: The Finite Verb Phrase

functions	+ Nucleus	± Actor Terminator	± Undergoer Terminator	± Elevation
exponents	VP Base	(v. Table 66)	(v. Table 66)	(v. Table 37 cf. also p. 236)

The components of a minimal VP Base are discussed first, followed by a discussion of the peripheral clitics.

1. MINIMAL VERB PHRASE BASE

The structure of a minimal VP Base with tense, mode, aspects, and mood is portrayed in Table 56.

Table 56: Minimal VP Base

functions	+ Mode ₁ $\begin{bmatrix} - \\ + \end{bmatrix}$	Tense ₁	+ Head	+ Mode ₂ $\begin{bmatrix} + \\ - \end{bmatrix}$	Tense ₂	+ Aspect	+ Mood	+ Mode ₃
exponents	∅ 'DECL'	'I.PST'	one or more juxta- posed verb stems	∅ 'Realis'	TNS Marker (v.Table 57)	∅ 'PERF'	-a 'PRSUP'	-t 'Irrealis'
	wa- 'IMPER'	(v.Table 57)		Irrealis Marker (v.Table 59)		-wë 'IMPF'		
	a- 'HORT'			-wah 'NEG.HORT'				

Notes: tense₁ and tense₂ do not co-occur, but one of them must be manifested.

Exponents of tense₁ occur in the tense₂ position when an irrealis marker manifests Mode₂.

Example 1 is a minimal verb phrase. It includes a minimal manifestation of a VP Base which includes a minimal expression of a verb stem manifested by *yi* 'go'.

- $$\overbrace{\text{VP}} \\ \overbrace{\text{VP BASE}} \\ \text{1. } \text{yi} - \text{m}\ddot{\text{e}} - \text{r} \\ \text{go-R.PST-3SF} \\ \text{'He went'}$$

a. TENSE AND ASPECT

The tense system is a five-term system, with three past tenses, a present, and a future. Tense and aspect formatives are usually morphologically analysable but sometimes are manifested in portmanteau forms. It is convenient, therefore, to consider tense and aspect together. Furthermore, manifestations of aspects and linear ordering of tense and aspect vary with respect to tense. The tense-aspect system, then, can be described as a system which varies according to the parameter of time reference, on the one hand, and according to the parameter of aspectual specification on the other. The aspects involved are Perfective and Imperfective.

Table 57: Tense and Aspect

	Remote Past -më	Near Past -rë	Immediate Past ∅ ~ f- ~ -fë -tawë	Present ∅	Future -rhw ~ -rah
Perfective ∅	-më	-rë	∅ f- -tawë -fë	∅	-rhw ~ -rah
Imperfective -wë ~ -w	-më-w	-rë-w	--	-wë ~ -w	-rhw ~ -rah

Tense

The time references of Alamlak tenses are as follows:

Remote past (R.PST): two days before the present
and earlier.

Near past (N.PST): one day before the present.

Immediate past (I.PST): the same day of but before
the time of the utterance.

Present (PR): the time of the utterance.

Future (FUT): the period of time following the
utterance.

Verb conjugations are partly distinguished by variations in the Immediate past tense markers. See the discussion of verb conjugations in section B.1.e.

The Immediate past tense may function as a past and present perfect tense-aspect or as a simple past tense. The clearest cases of the perfect use of the Immediate past tense occur in contrafactual sentences (cf. VIII.C.1.b.). The predicate of the apodosis clause may manifest any past tense but the Immediate past tense may be used to refer to any past time.

2. yhof nër wit a - gur - kah - nëm - r - e
y yesterday slit HORT-beat-PR.IRR-1PL-3SM-G.SUB
.gong

nayay - r - fë - r
come-IRR-I.PST-3SM

nayay - r - rë - r
come-IRR-N.PST-3SM

'If we had beat the drum for him yesterday, he would have come (then).'

The future tense marker has two allomorphs which occur as follows:

-rhw → { -rhw / -- IS Person-Number marker (-a(n))
Presupposition marker (-a)
-rah / elsewhere

Aspects

Perfective

The Perfective aspect in past tenses portrays a situation as a completed whole, "without regard to internal temporal constituency" (Comrie 1976:12). Perfective forms are common in past time where they contrast with Imperfective forms. Since the Perfective aspect is unmarked (or marked with zero) it is debatable whether or not the Perfective aspect co-occurs with the present tense (also marked with zero).

There are two reasons for arguing against a Perfective aspect in the present tense. Only a small morphologically-defined set of verbs may occur without the Imperfective aspect in the present tense. Unmarked for tense or aspect, they may be interpreted as formally manifesting the Perfective aspect in the present tense; these forms freely vary with the Imperfective forms, however, and in most cases there is no apparent contrast in meaning. These are verbs of Irregular Conjugations I and II plus a few miscellaneous irregular verbs, all of which add a consonant to the end of the present tense form of the stem (cf. V. B.l.e.). They do not form a coherent semantic class:

kahuk	'give'	kakrmit	'run away in fear'
wanuk	'hear'	funit	'swim'
kamuk	'say, think'	fiknit	'enter'
hitit	'see'	kit	'go'
hoit	'sleep'	nakut	'call'

The second reason to doubt that these forms, unmarked for tense and aspect, manifest the Perfective aspect has to do with the distribution of the Presupposition mood (cf. V.B.l.c.). The Presupposition marker occurs in Content Interrogative Clauses together with the Imperfective aspect. It cannot occur in past tense perfective forms, but does occur in the present tense with the irregular verbs above unmarked for aspect. Since it is restricted from co-occurring with the Perfective aspect in past tenses, its manifestation in present forms is

evidence that the present tense forms do not encode the Perfective aspect. The distribution of the Presupposition mood (-a) is illustrated in Table 58.

Table 58: The Distribution of the Presupposition Marker (-a) In Content Interrogative Clauses
(displayed with yi 'go')

		Tense				
		R.PST	N.PST	I.PST	PR	FUT
Aspect	Perfective	yi-më	rië	yifi	-	-
	?	-	-	-	yit-a	-
	Imperfective	yi-më-w-a	rië-w-a	-	yit-w-a	rihw-a

On the other hand, there is some evidence for analysing the irregular verb forms, which are unmarked for tense and aspect as manifesting the Perfective aspect in the present tense. While most contexts equally allow the Imperfective or the unmarked form in the present, there are cases where there is a definite preference for one or the other. In these cases the unmarked (Perfective) form seems to imply a presently continuing state or event which was initiated further in the Immediate past than that implied by the Imperfective aspect. The Present Perfective, then, seems to indicate a state or event which is viewed as continuing but which is well on its way to completion.

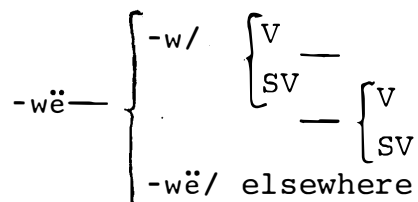
3(a). hoit - ϕ - r 'He sleeps' (= He is sleeping)
sleep-PR-3SM
.PERF

(b). hoit - wë - r 'He is sleeping'
sleep-PR-3SM
.IMPF

Imperfective

The Imperfective marker -wë has two allomorphs which

occur as follows:



-w precedes or follows a vowel or semi-vowel and -w \ddot{e} occurs everywhere else.

Perfective and Imperfective aspects clearly contrast in the Remote past and Near past tenses as illustrated in Table 57.

The Imperfective aspect views a situation with regard to its internal temporal constituency either as habitual or continuous. It does not exclude a progressive meaning, but a specific progressive view of a situation is expressed by other aspectual verbal constructions (cf. Section V. B.3.a.). The precise interpretation of the Imperfective is determined by contextual considerations. Thus, example 4 has a 'habitual' meaning in a context such as this: "They were being sick at the beginning of every rainy season, so they bought the magic song from a neighbouring tribe." A 'continuous' interpretation is possible in a context such as this one: "They were being sick for two months before moving to a different house."

4. dbëna - m \ddot{e} - w - m
 sick - R.PST - IMPF - 3PL
 'They were being sick.'

b. TENSE AND MODE

Five modes may be distinguished in verb morphology: Declarative, Imperative, Hortative, Realis, and Irrealis. The notion of mode is used here in contrast to mood (cf. Section B.1.c.). The mode of the verb refers to the formulation of a type of expression, e.g. statement or command, without reference to the speaker's attitude toward what is being said. Mood, however, includes an indication of the speaker's attitude toward what he says.

Realis and Irrealis are superimposed on the other modes. Certain morphemes in this system are portmanteau forms combining meanings of tense and mode. The Irrealis morphemes are suppletive in different tenses. Tense and mode are discussed together so that the morphemes of both systems can be seen in relation to each other.

Declarative and Realis Modes

Declarative and Realis are the morphologically unmarked modes. Declarative is the form which signals a statement or an assertion. Realis indicates that the state or event expressed by the verb actually happened or certainly will happen. Example 5 illustrates an unmarked form of the verb *yi* 'go'.

5. \emptyset - yi - \emptyset - mē - r ¹
 DECL-go-REAL-R.PST-3SM
 'He went'.

Imperative and Hortative Realis

Imperative and Hortative prefixes signal a command or statement of obligation. In the Realis mode, Imperative and Hortative have complementary distributions; the Imperative co-occurs with second-person Actors (i.e., addressees) and the Hortative co-occurs with first- or third-person Actors.

¹ Zero morphemes will not be included in remaining examples unless they are in focus in the discussion.

Table 59: Tense and Mode

			Tense				
			Remote Past (-më)	Near Past (-rë)	Immediate Past (∅ ~ f- ~ -fë ~ -tawë)	Present (∅)	Future (-rhw ~ -rah)
Mode	Realis (∅)	Declarative (∅)	-më	-rë	∅ ~ f- ~ -tawë	∅	-rhw ~ -rah
		Imperative (wa-)	--	--	--	wa-	--
		Hortative (a-)	--	--	--	a-	--
	Irrealis (-r, -t and port-manteau morphemes)	Declarative (∅)	-r-më	-r-rë	-r-fë	-kah, -wat	-rhwa-t
		Imperative (wa-)	--	--	--	wa-...-kah	wa-...-twa
		Hortative (a-)	a-...-r-më	a-...-r-rë	a-...-r-fë	a-...-kah	a-...-twa

Imperative and Hortative Realis verb forms are illustrated in example 6 below.

6(a). (ni) nuat wa - ya - n - t
 (you) sago IMPER-eat-2S -3SF
 .patty
'You eat the sago patty!'

(b). (nëm) nuat a - ya - nëm - t
 (we(PL)) sago HORT-eat-1PL-3SF
 .patty
'Let us eat a sago patty!'

(c). (rër) nuat a - ya - r - t
 (he) sago HORT-eat-3SM-3SF
 .patty
'He should eat the sago patty!'

Irrealis Mode

In contrast to the Realis mode which indicates the actuality of a state or event, the Irrealis mode indicates that the state or event expressed by the verb either 1) was, is, or will not be an actuality, or 2) is or will not with certainty be an actuality.

This disjunctive definition covers the usage of the set of Irrealis markers as they are distributed in different constructions, viz., future Imperative and Hortative verbs and predicates manifesting negative clauses, contrafactual clauses and hypothetical clauses expressing obligation (with or without the component of contrafactuality). These constructions are illustrated here and some are discussed in more detail in Chapters VI (negative clauses) and VIII (Contrafactual and Hypothetical clauses).

Declarative Irrealis

Declarative Irrealis forms of the verb occur obligatorily in negative clauses and in Irrealis and Double Irrealis Clauses which manifest the apodosis of the Contrafactual Sentence (see Section VIII.C.1.b.5).

The Irrealis marker -r occurs immediately preceding the past tenses and -t occurs immediately following the future tense as in the negative clauses in example 7 below.

- 7(a). fiñji noh - r - mē - r
 NEG die-IRR-R.PST-3SM
 '*He did not die*'.
- (b). fiñji noh - r - rē - r
 N.PST
- (c). fiñji noh - r - fē - r¹
 I.PST
- (d). afē noh - rhwa - t - r
 NEG die - FUT - IRR - 3SM
 '*He will not die.*'

Irrealis and Double Irrealis clauses (cf. Section VIII. C.1.b.5)) exhibit Declarative Irrealis verb forms in the Contrafactual Sentences below. The Double Irrealis verb manifests both the -r suffix before the tense marker and the -t suffix after it.

- 8(a). a - i - kah - n - n, hik - IRR CL
 HORT-go-IRR - 2S-G.SUB follow-IRR-I.PST-1S-2S
 '*Had you gone, I would have followed you.*'

- (b). a - i - dohra - roh - kah - n - n
 HORT-go-NONPOSSD - be - IRR -2S-G.SUB

 Double Irrealis Clause
 afē hik - r - fē - t - an - n
 NEG follow - IRR-I.PST-IRR- IS -2S
 '*Had you not gone, I would not have followed you.*'

¹ Note that the Immediate Past tense marker follows the stem in Irrealis forms of the verb but precedes the stem in Realis forms (cf. Table 56).

The Irrealis present tense morphemes (Declarative mode) are -kah and -wat (as in Table 59). Both forms occur only in negative clauses. The semantic distinction between these two morphemes is not fully understood at this time. The -kah morpheme seems to indicate a non-actuality which is certain (such as in the case of a first-hand report), whereas -wat seems to indicate an uncertain non-actuality, i.e., a surmise on the part of the speaker that the state or event expressed by the verb is not happening.¹ These morphemes are illustrated in example 9 below.

9(a). fiñji yay - kah - r - m
 NEG eat - IRR -3SM-3PL
 'He is not eating them / he does not eat them.'

(b). afë yay - wat - r - m
 NEG eat - IRR -3SM-3PL
 '(I surmise that) he is not eating them / he does not eat them.'

¹ There is morpho-syntactic evidence which suggests that -wat is a sequence of morphemes -w-a-t, Imperfective-Presupposition-Irrealis. Firstly, -wat must co-occur with the negative word afë which otherwise only occurs with the future Irrealis forms of the verb; the Irrealis suffix in that case is -t. Secondly, the past tense Irrealis (-r) occurs in Declarative Perfective forms as in Table 59. They do not co-occur with the Imperfective forms, however, unless they are also marked with the Presupposition marker -a. Thus *dbëhna-r-më-w-m sick-IRR-R.PST-IMPF-3PL for *'they were sick'* is ungrammatical. dbëhna-r-më-w-a-m sick-IRR-R.PST-IMPF-PRSUP-3PL *'they were sick'* is grammatical, having included the Presupposition marker. The Irrealis plus future tense seems to require the Presupposition marker as well. Note in Table 59 that the future Declarative Irrealis form is -rhwa-t with -t suffixed to -rhwa rather than to the Realis form of the future tense -rhw. Since Irrealis is not mutually exclusive of the Imperfective aspect as long as it is accompanied by the Presupposition marker, we would expect it to occur in the present tense with the Imperfective marker (-wë ~ -w) plus the Presupposition marker (-a) i.e., -w-a-t.

Semantically the 't' in -wat (present Irrealis Declarative) may be associated with -t (Irrealis morpheme which occurs with future forms of the verb). In both cases there is a component of uncertainty where future events are predicted or present events are inferred from inconclusive evidence.

If the 'w' in -wat represents the Imperfective morpheme, an imperfective meaning should characterize the Irrealis form -wat. The form can, in fact, be associated with an imperfective meaning, i.e.,

Imperative and Hortative Irrealis

Various combinations of the Irrealis markers and Imperative and Hortative mode markers which co-occur with certain tense markers convey a particular conflation of component meanings including contrafactually and/or hypothetically or indefinite future.

Hortative Irrealis in Past Time

Hortative plus Irrealis in past time convey the notions of obligation and contrafactuality in what is termed a Contrafactual Hortative. Imperative and Irrealis modes do not co-occur with past tenses.

10. yënr a - yakrmay - r - mē - r
 boy HORT-run.away-IRR-R.PST-3SM
 'The boy should have run away.'

This verb form may occur with any person (first, second, or third) as the Actor.

Imperative and Hortative Irrealis in Present Time

The combination of Imperative and Irrealis modes in present time conveys obligation (with the illocutionary force of a command) plus hypotheticality or contingency. The verb form exhibiting these modes manifests the protasis of a Conditional Sentence (cf. Section VIII.C.1.b.4)). It occurs only with a second-person Actor as in the first clause in example 11 below.

(cont'd)

either with the Habituaive or Continuative sense. The meaning of the -kah morpheme does not contrast, however, with the imperfective sense of -wat. Synchronically at least, both morphemes may express Habituaive or Continuative aspects, as in example 9. -kah is not, therefore, the Perfective counterpart of -wat. It is possible to analyse -kah as a redundant negative marker in Declarative verbs which has been extended to an Irrealis marker in Conditional and Contrafactual Sentences where it co-occurs with Imperative and Hortative markers.

13(a). (nikë) wa - roh - twa - kë
 (you.PL) IMPER-sit-FUT - 2PL
 .IRR
 .IMP/HOR
 'You all sit/be seated!'

(b). (rër) a - roh - twa - r
 (he) HORT -sit - FUT-3SM
 .IRR
 .IMP/HOR
 'May he be seated!'

These forms may be compared with the present Realis Imperative and Hortative forms in example 6.

Negative Hortative

The final modal morpheme to be discussed (-wah) is not included in Table 59. It is listed as an exponent of the Mode₂ function in Table 56 because it is mutually exclusive with the Irrealis markers, occurs in the same linear position, and is semantically similar to the Irrealis markers.

The Hortative present tense form of the verb is the only verb form which exhibits a morphological negative form with the possible exception of the form of the Declarative present verb with -kah.

Three important features of the Negative Hortative are illustrated in example 14 below. Firstly, unlike the positive Imperative and Hortative verbs which co-occur with only certain persons, the Negative Hortative verb occurs with all three persons. Secondly, the Negative Hortative refers either to present or immediate future time; since it never exhibits a future tense affix it may be best to regard it as tenseless rather than as a present-tense form. Finally, the Negative Hortative may be interpreted in either a durative or a punctiliar sense.

14(a). a - pitha - wah - nëm
 HORT- talk - NEG - 1PL
 'We should not talk./ Let us stop talking.'

- (b). a - yhot - wah - n
 HORT-cough - NEG - 2S
'Don't cough!/ Stop coughing!'
- (c). a - ri - pitha - ak - wah - r
 HORT-ELEV - talk -INCHO-NEG-3SM
'He should not start talking.'

c. PRESUPPOSITION MOOD

The Presupposition marker (-a) may co-occur with the Imperfective aspect, and it must occur in Irrealis Imperfective verbs. It has been analysed as a mood which often marks semantically backgrounded or presupposed information¹ in a discourse. The label 'Presupposition' indicates a semantic commonality among most constructions marked with -a, although it does not seem to consistently define the marker in all cases.

The notion of presupposition as used here is well suited to describe the occurrences of -a in the following constructions: Content Interrogative Clauses (cf. Section VI. B.2) and General Relative Clauses (cf. Section IV.C.2.d.) where it occurs obligatorily with the Imperfective form of the verb, and General Subordinate and Nonfinal Subordinate clauses (cf. Tables 108 and 109 in Chapter VIII), where it occurs optionally. In Content Interrogatives, the predicate is presupposed and the point of the clause is to determine who, what, where, when, or how with reference to the predicate. In Yes-No Interrogatives, or in simple Declaratives, by contrast, it is precisely the truth value of the predicate which is being questioned or asserted, e.g.,

- 15(a). Content Interrogative CL
 frëhm dbëhnay - w - a - m
 who sick - IMPF-PRSUP-3PL
'Who is sick?'

¹ The term 'presupposition' is used here in S. Thompson's sense (Thompson and Longacre, n.d., p.2). That is, the information which is marked as presupposed is taken as 'given' from the speaker's point of view in order that he may focus the hearer's attention elsewhere in the utterance.

- (b). Yes-No Interrogative /Declarative CL
 yënm dbëhnay - w - m
 children sick - IMPF - 3PL
 'Are the children sick?/The children are sick'.

Examples 15(a) and 16 (below) would be ungrammatical without the Presupposition marker, and example 15(b) would be ungrammatical with it.

Relative clauses help to identify the referent of a noun phrase. As such they are semantically backgrounded vis-à-vis the main clause which makes the basic assertion of the utterance, e.g.,

16. ind dbëhnay - w - a yënm hoitwëm
 DEM sick - IMPF-PRSUP children they.are.sleeping
 'The sick children are sleeping.'

Similarly, the General Subordinate and Nonfinal Subordinate Clauses which exhibit the Presupposition marker are more clearly semantically backgrounded than those which do not. The General Subordinate Clause in example 17(a) implies that the man's driving of trucks is supportive to his job of building houses. Conjoined statements of unrelated jobs would not exhibit the Presupposition marker in their predicates.

- 17(a). GEN SUB CL
 nëNgorf ha - tonit - w - a - r - ne,
 trucks CAUS - run - IMPF-PRSUP-3SM-G.SUB

 kuñm hiNgnaywër
 houses he.builds
 'He runs (two) trucks, (and) builds houses.'

- (b). Nonfinal CL
 marr tay - w - a - t - r, yiki - wë - r
 sun shine-IMPF-PRSUP-DA-3SM perspire-IMPF-3SM
 'Because the sun is shining [different Actor] he is perspiring.'

The Nonfinal Clause in example 17(b) is the implied cause of the independent clause.

The notion of presupposition or semantic backgrounding does not seem appropriate for the morpheme -a in the other constructions in which it occurs. For example, -a occurs (obligatorily) with Declarative Irrealis Imperfective forms and possibly as a part of the future morpheme in Declarative Irrealis forms.¹ These forms may occur as independent predicates as in example 18 below.

18(a). fiñji dbëhna - r - më - w - a - m
 NEG sick -IRR-R.PST-IMPF-PRSUP-3PL
'They were not being sick.'

(b). afë dbëhna - rhwa - t - m
 NEG sick - FUT - IRR-3PL
'They will not be sick.'

d. VOICE

The Alamblak verb is neutral with respect to the parameter of voice. Certain clause patterns involving intransitive verbs derived from transitives which can be conveniently described as exhibiting a Middle voice are discussed in Section VI.B.4.

e. VERB STEM

The stem of the verb construction can be very complicated. The expansion potential of the stem will be discussed in Section V.B.3. In this section, minimal manifestations of the stem will be discussed including morphological classes of verbs,

¹Allomorphs of the future Declarative Realis marker are -rhw (with IS) and -rah (with other Actors). As discussed in the footnote on p. 218 the Irrealis marker -t is suffixed to -rhwa rather than to the Realis future -rhw. Since Irrealis cannot occur with the Imperfective aspect without the Presupposition marker also, there is reason to suspect that the 'a' in -rhwa-t (future.Declarative-Irrealis) is the Presupposition marker as well.

Further supporting evidence comes from Relative clauses. As already indicated (p.222), an Imperfective form of the verb manifesting the predicate of a General Relative Clause must also exhibit the Presupposition marker. The future tense form of such a verb is -rhwa, indicating that it is the future tense -rhw plus the Presupposition affix -a.

i.e., verb conjugations, and derived, i.e. adjectival and nominal, verb stems.

1) VERB CONJUGATIONS

Verb conjugations are defined according to morphological variations in the verb root as it occurs in different tenses, and by variations in the Immediate past tense inflections. Many roots do not vary at all and there are about a dozen of the inevitable irregular roots. A schema of cross-classification of verbs is given in Table 60. Verb roots may be classed according to whether or not variations occur on the initial consonant. Another classification is defined by diphthongization patterns of the last vowel of the root. Variations of the Immediate past tense inflection is the basis of yet another classification. In most cases, irregular roots may be viewed as departures from one or more of the regular classes, but they are not included in the cross-classifying system to avoid positing single-member classes.

Table 60: Morphological Variations Defining
Verb Conjugations

Types of Variation	1. Immediate Past Tense Variations (Realis mood)	2. Consonant Variations (Verb root- initially)	3. Vowel Variations (Verb root- finally)
Features of Verb Conjugations	A. \emptyset	1. no variation	a. no variation
	B. f-	2. initial C \rightarrow <div style="display: inline-block; vertical-align: middle;"> { <ul style="list-style-type: none"> f/past tenses k/present tense y/future tense </div>	b. V(C)- \rightarrow Vy(C)- /Immediate past and present tense

Table 61 gives an example for five of the eight possible regular conjugations which have been observed.

Table 61: Verb Conjugations and Example Paradigms¹

Regular Conjugations	Features (V. Table 60)	Gloss	Remote past	Near past	Immediate past	Present	Future
I	A.1.a.	<i>drink</i>	fut-më-r	fut-rë-r	fut-r	fut-wë-r	fut-rah-r
II	A.1.b.	<i>wash</i>	kipta-më-r	kipta-rë-r	kiptay-r	kiptay-w-r	kipta-rah-r
III	A.2.a.	<i>fell</i>	foh-më-r	foh-rë-r	foh-r	koh-wë-r	yoh-rah-r
IV	A.2.b.	<i>get</i>	fak-më-r	fak-rë-r	fayk-r	kayk-wë-r	yak-rah-r
V	B.1.a.	<i>hit</i>	tat-më-r	tat-rë-r	f-tat-r	tat-wë-r	tat-rah-r

¹ It can be noted from Table 61 that feature B (f- 'I.PST') does not co-occur with verb roots exhibiting feature 2. The explanation for this gap is possibly phonological since f- does not occur prefixed to any f- initial stem (all verb roots with feature 2 are f-initial in past tenses). Looking further, the f- prefix does not co-occur with verb roots exhibiting feature b either, but only with roots which have no variation in form, i.e., Conjugation V, and possibly in one or two irregular verbs.

There is considerable variation in patterns of indicating the Immediate past tense. It is clear that this part of the tense system has undergone and is probably still undergoing adjustments. This is not surprising since the Immediate past is the only tense indicated by a prefix instead of a suffix, (in the Realis mode). Semantically the Immediate past is also differentiated from the other past tenses by one of its functions as a perfect aspect (cf. V.B.l.a.) which may in fact be the historically prior function of the Immediate past tense marker.¹

¹ There is synchronic evidence that verb roots with consonant-initial variations (feature 2) reflect a reinterpretation and analogical reshaping of the stems. The precipitating source for the reanalysis and extension was possibly a constraint forbidding vowel-initial words. The semi-vowel y typically separates vowel clusters and would be a likely candidate (along with w) for the initial consonant of previously vowel-initial words. The constraint would require the semi-vowel initially but not word-medially. Thus the variation in ak 'get' in example 19:

19(a). yak-rah-r-t get-FUT-3SM-3SF *'He will get it.'*

(b). tuf-nah-ak-rah-r-t throw-arrive-get-FUT-3SM-3SF
 'He will shoot it.'

With the frequent prefixing of the stem with the Immediate past, f became preferred as the initial consonant of the root. It could easily have been reinterpreted as part of the stem and generalized to all past tense forms of the stem. Perhaps through some association of k with the present (note irrealis forms -r for past tenses and -kah for present tense), f → k/ present tense, became a synchronic rule leaving y-initial forms for the future tense. This is the present rule for Conjugations III and IV. Again when occurring word-medially, the initial consonant is not required by the general constraint and thus elides. Compare synchronic forms in example 20 below.

20(a). fak-më-r-t get-R.PST-3SM-3SF *'He got it.'*

(b). yarim-ak-më-r-t ELEV.-get-R.PST-3SM-3SF
 'He got it (on a level plane toward the speaker).'

With the reinterpretation of the tense marker in Conjugations III and IV, the Immediate past tense as well as the present tense was unmarked. (The two tenses were readily distinguishable by the Perfective Immediate past vs. the usual Imperfective present). This change began to generalize to other verbs resulting in an expansion of feature A (∅ 'Immediate past tense marker') and diminishing of feature B (f- 'Immediate past tense marker' which now characterizes less than 15% of the verbs).

There are recurring patterns among the irregular verbs which suggest several residual conjugations.

Irregular Conjugation I

Irregular Conjugation I is characterized by feature cc plus certain irregularities. Feature c: V(C)- → Vy(C)- / Remote past, Near past and Future tenses. The pattern of feature C is complementary with respect to feature B. Feature B diphthongizes in Immediate past and present tenses and feature C diphthongizes in all tenses except Immediate past and present. In both patterns the Immediate past and the present stem forms are the same in contrast to stem forms in the other tenses. Three verbs seem to exhibit feature C as illustrated in Table 62.

Table 62: Irregular Conjugation I Verbs

	R.PST	N.PST	I.PST	PR	FUT
'hear'	wayn-më-r [¹ wañmëŘ]	wayn-rë-r [¹ wañřëŘ]	wanu-r [¹ wanuŘ]	wanuk-wë-r [wa ¹ nukwoŘ]	wayn-rah-r [wañ ¹ řagiŘ]
'say'	may-më-ř [¹ memëŘ]	may-rë-r [¹ mařřëŘ]	famu-r [¹ pamuŘ]	kamuk-wë-r [ka ¹ mukwoŘ]	mi-rah-r [mi ¹ řagiŘ]
'give'	hay-më-r [¹ xemëŘ]	hay-rë-r [¹ xařřëŘ]	fahu-r [paġuŘ]	kahuk-wë-r [ka ¹ gokwoŘ]	hi-rah-r [xi ¹ řagiŘ]

Other features of this class include the additions to the stem of -u in the Immediate past and -uk in the present tense¹ following metathesis in the CV roots.

Irregular Conjugation II

Irregular Conjugation II is characterized by feature d.

Feature d: V- →

Vy/	Immediate past
it/	present tense
i/	future tense

¹See the discussion of the Middle Sepik tense markers in X.E.3.b. for a possible source of the added uk in the present tense, viz, Proto-Middle Sepik * -kwa 'non-past tense'.

Verbs in this conjugation include the following: ¹

hoe	'sleep'
yakrme	'run away'
fune	'swim'
fkne	'enter'

The paradigm is illustrated with fune 'swim':

fune-më-t	(R.PST)	'She swam'.
fune-rë-t	(N.PST)	'She swam'.
funey-t	[puneš] ~ funi-t ²	(I.PST) 'She swam'.
funit-wë-t	(PR)	'She is swimming'.
funi-rah-t	(FUT)	'She will swim'.

Three roots host an Immediate past tense marker which resembles the Imperfective (-wë ~ -w) but which lacks its phonologically conditioned allomorph -w. Other irregular verbs have unique vowel variations, loss and metathesis of phonemes or syllables. Paradigms of these irregular verbs are given in Table 63, marked for tense and third-person-singular-masculine Actor. Irregular variations are underlined.

Basic Stems

As a general rule the future tense form of the stem is also the basic stem. The basic stem has the widest distribution such as in nonfinite constructions or nonfinal position in a verb serialization construction.

2) ADJECTIVAL AND NOMINAL VERB STEMS

Derived process verb stems are formed by suffixing -tay (a Conjugation II verb stem form, cf. Tables 60 and 61) to

¹Other verbs of this same basic pattern have i-final stems in first-person-singular-future forms and e-final stems for other persons in the future. These verbs include ningē 'laugh', hëmbre 'put into', and tone 'run'.

²Fluctuating forms in the Immediate past tense are indicative of reinterpretation of the form of the stem based on the first-person-singular form which is funi-a by regular phonological derivation (cf. Chapter II).

Table 63: Miscellaneous Irregular Verbs

	R.PST	N.PST	I.PST	PR	FUT
'see'	hiti-më-r	hiti-rë-r	hiti-tawë-r	hitit-wë-r	hiti-rah-r
'unsuccessful attemptive' (aspectual)	tita-më-r	-tita-rë-r	-tita-wë-r	-tita-w-r	-tita-rah-r
'eat'	fa-më-r	fa-rë-r	fa-wë-r	ka-w-r	ye-rah-r
'go'	yi-më-r	<u>r-i-ë-r</u>	yifi-r	kit-wë-r	(yi) <u>riah-r</u>
'diswant'	kur-më-r	kur-rë-r	fokr-r	kokr-wë-r	kur-rah-r
'burn'	kur-më-r	kur-rë-r	fukr-r	kukr-wë-r	kur-rah-r
'vomit'	fëk-më-r	fëk-rë-r	fëk-r	këk-wë-r	kë-rah-r
'call'	naku-më-r	naku-rë-r	naku-r	nakut-wë-r	naku-rah-r

certain adjectives and noun roots.

Table 64: Derived Process Verb Stems

functions	+Core	+Derivation
exponents	adjective root noun root [+ Process]	-tay

Adjectival Verbs

Most adjective roots may function as Derived Process Verbs (cf. the relevant discussion on adjectives in Section III.C.3.). Example 9 in Chapter III is repeated here as example 21.

21. bro - tay - w - r
 big -PROC-IMPF-3SM
 'He is getting big'

Nominal Verbs

A few noun roots may manifest the core slot of the derived Process Verb stem. These roots are specified by the feature [+ process] in Table 64. Cf. examples in 22.

22(a). kisfu - tay - wë - t
 twilight-PROC-IMPF-3SF
 '*It is becoming morning twilight (dawn).*'

(b). tahiy - ta - më - t
 stone-PROC-R.PST-3SF
 '*It became stone.*'

Derived Process Verbs

When suffixed to verb roots the Process suffix (-tay) functions as an aspect marker. This and other non-class-changing derivational processes will be discussed in Section V.B.3.a. concerning serial verb constructions.

2. PERIPHERAL AND TERMINAL INFLECTIONS

The peripheral inflectional categories viz, Actor/Undergoer, Elevational and Inchoative affixes, are integrated with the minimal VP Base (Table 56) in the expanded Table 65. Subordinating inflections are discussed in Chapter VIII. The Head slot will not be expanded until Section V.B.3.

a. PRONOMINAL PERSON MARKERS

Verbal Pronominal markers indicate the Actor and Undergoer¹ of the clause within which the verb occurs. The Actor marker is obligatory in the basic independent verb. The Undergoer is optional with most verbs; when manifested it immediately follows the Actor marker. The person markers have the same form as do person-number-gender terminators of noun phrases and thus indicate the person, number and, for

¹ The semantic analysis of the person markers is presented in Section VII.B.3. The notions of Actor and Undergoer are defined there.

Table 65: Expanded VP Base with Peripheral Inflections

functions	Mode ₁	Elevational ₁	Tense ₁ Head	Inchoative	Mode ₂ Tense ₂ Aspect Mood Mode ₃	Actor	Undergoer	Elevational ₂
exponents		Elevational prefixes (v.Table 69)		-ak 'inchoative'		person markers (v.Tab. 66)	person markers (v.Tab. 66)	Elevational suffixes (v.Table 37)

third-person-singular, gender of the Actor and Undergoer. They are listed in Table 66.

Table 66: Pronominal Person Markers

		Singular	Dual	Plural
1		-a(n) ¹	-në(n)	-nëm
2		-∅(n)	-f+n	-kë(m)
3	M	-r	-f	-m
	F	-t		

The Actor and Undergoer Person markers are illustrated by the two paradigms in Tables 67 and 68.

Table 67: kit (go. Present. Perfective)

	Singular	Dual	Plural
1	kit-a	kit-në	kit-nëm
2	kit-n ²	kit-f+n	kit-kë
3 M	kit-r	kit-f	kit-m
F	kit-t		

¹The morphophonemic rules governing the manifestation of person markers is the same as with NP terminators. The final nasals which are in parentheses in Table 66 reduce word-finally unless, in the case of second-person-singular, it follows a consonant.

²The second singular form in the Imperfective is kit-wë-∅.

Table 68: tat-wë (hit-Imperfective)

		Singular	Dual	Plural
<u>Act</u>	<u>Und</u>			
1	- 3 $\begin{bmatrix} M \\ F \end{bmatrix}$	tat-w-an- $\begin{bmatrix} r \\ t \end{bmatrix}$	tat-wë-nën-f	tat-wë-nëm-m
2	- 1	tat-wë-n-a	tat-wë-fin-në	tat-wë-këm-nëm
3 $\begin{bmatrix} M \\ F \end{bmatrix}$	- 2	tat-wë- $\begin{bmatrix} r \\ t \end{bmatrix}$ -n	tat-wë-f-fin	tat-wë-m-kë e e

b. ELEVATIONAL MARKERS

Two sets of Elevational markers are primarily used to indicate the direction (up, down, or level) of Motion verbs or the location of non-motion State or Action verbs with reference to the speaker.

The prefixes indicate the direction of the motion of the predicate, or presupposed motion leading to the action of the predicate, or the direction in which Experiencer verbs are effected. They indicate directions on a level plane, sloping up, sloping down, or straight down. Prefixes indicating motion on a level plane and one set indicating upward motion also indicate whether the motion is toward or away from the speaker.¹

Elevational prefixes are illustrated in example 23 below.

23(a). yarim - ak - r - t
 ELEV-get-3SM-3SF
 'He got it (toward the speaker).'

(b). u - hitit - wë - r - m
 ELEV-see-IMPF-3SM - 3PL
 'He is looking up at them (away from the speaker).'

¹Secondarily, two of the prefixes are used to locate an event in time. A future setting is indicated by më- 'upward'; mi- 'downward' indicates a past setting.

Table 69: Elevational Prefixes¹

	Level	Sloping up	Sloping down	Straight down
Toward speaker	yari(m)- ²	yua-	më-	mi-, yhä(m)-
Away From speaker	ri(m)-	u-		

23(c). më - dbëhnay - r
 ELEV - sick - 3SM
'He was sick (upward).' (= *'Having gone up, he became sick'*).

(d). mi - brñi - r
 ELEV -move-3SM
 .away
'He went down.'

(e). yhëm - htit - wë - r - m
 ELEV - see - IMPF - 3SM-3PL
'He is looking down at them.'

(f). wa - fayk - r - t
 ELEV -get - 3SM-3SF
'He got it down below.'

¹ The prefixes are semantically very much like motion verbs. They are distinct from the bound motion verb brñ *'move'* in that 1) brñ cannot occur without an elevational prefix; 2) brñ must indicate a direction toward or away from the speaker by -i (possibly derived from yi *'go'*) or -ay (possibly from nayay *'come'*) suffixes respectively; and 3) brñi or brñay may occur as a part of a complex verb stem (thus following the (I.past tense marker) rather than in the linear position occupied by Elevational prefixes (cf. Table 65).

² Final nasals reduce preceding heterorganic consonants.

In contrast to the prefixes, the Elevational suffixes do not imply motion, but they locate the action or state of non-motion verbs or the goal (destination) of Motion verbs with respect to the position of the speaker. These Elevationals indicate the spatial relationships upward, downward, or on a level plane,¹ e.g.,

-i(t)o	'on a level plane'
-ko	'up'
-we ~ -he	'down'

These same elevationals occur in the termination of noun phrases (cf. IV.C.1).

Examples in 24 illustrate the Elevational suffixes.

- 24(a). fayk - r - t - ito
 get - 3SM-3SF-ELEV
 'He got it (over there, on a plane level with the speaker).'
- (b). dbëhnay - r - ko
 sick - 3SM -ELEV
 'He was sick up there.'
- (c). yifi - r - we
 go - 3SM - ELEV
 I.PST
 'He went down there.'

Elevational prefixes may co-occur with Elevational suffixes as illustrated in example 25.

- 25(a). wa - mi - tēh - n - we
 IMPER-ELEV - stand-2S-ELEV
 'Stand down, down there!'

¹ The two suffixes indicating 'up' and 'down' also have an extended use of locating a period of time in the future or past, respectively.

- (b) yua - muh - wë - r - we
 ELEV-climb-IMPF-3SM-ELEV
'He is climbing up down there.'

c. INCHOATIVE

Inchoative is defined as the initiation phase of an event, or the initial phase of a state.

The Inchoative morpheme normally co-occurs with an Elevational prefix. In the unmarked case the Elevational prefix ri(m)- is used with the Inchoative. This usage of the Elevational ri(m)- does not index elevational or directional factors; the construction is a stylized use of the morpheme which together with the Inchoative is literally something like "get to ...", e.g., ri- ... -ak 'to- ... -get', as in "get to work", which has an inchoative sense in English. When elevational and directional factors are intended to be portrayed as well, any appropriate Elevational prefix may be used in conjunction with the Inchoative. Otherwise the most neutral Elevational prefix ri(m)- ('away from speaker on level ground') is used as a part of the inchoative formula. Examples in 26 illustrate the use of the Inchoative suffix.

- 26(a). ri - yuk - ak - rah - r
 ELEV-bathe-INCHO-FUT-3SM
'He will begin bathing.'

- (b). wa - mi - yuk - ak - n
 IMPER-ELEV-bathe-INCHO-2S
'Begin bathing down (there).'

3. EXPANDED VERB STEM: SERIAL CONSTRUCTIONS

In this section we will examine the structure of complex verb stems. Structurally the complex verb stem is a serialization of roots (Verb, Noun, Adjective, Time Word, and Adverb). Serialized constructions range from stem-like derived and compound stems, to constructions resembling predicates of merged clauses accompanied by strict constraints

on possible combinations of clause participants,¹ with phrase-like constructions with head plus modifying constituents in between.

There is no discrete boundary between derivational-like constructions and phrasal sequences of roots; therefore they are all described as serial constructions. For example, there are more than 30 roots which function structurally like derivational affixes and semantically as modifying aspectuals. Among these, some are bound roots (genuine affixes), others are verb roots which seldom manifest the stem of a simple verb in naturally occurring speech, and others are common verb roots, i.e., clearly serialized roots rather than derivational affixes. The bound roots do not appear to be any more restricted in distribution than the common verb roots, as might be expected if they represented functionally contrasting sets such as derivation versus inflection.²

Sequences of verb root(s) plus verb, noun, adjective, Time Word, or adverb root are described as serial constructions. As each type of sequence is discussed below, evidence is presented for treating them within the same framework, i.e. as serial constructions. The general constraint in common to all of these types of sequences is that only commonly associated notions (states, events, participants, ideas, etc.) can be encoded by serial constructions. This general constraint, it will be seen, has certain secondary effects on the types of roots or particular combinations of roots which are serialized (e.g. generic and nonspecific noun roots are most commonly 'incorporated'). Sapir (1911:265), in his defence of the notion of noun incorporation in Amerindian languages,

¹ Constructions of this type could be likened to semantically contracted propositions or consolidated sequences of propositions. They are discussed in this section as processes something like a lexicalization process, such as the derivational process. They are discussed in terms of surface structure (as are morphologically derived forms) with rules governing their construction, rather than as constructions which are derived from underlying sequences of clauses by syntactic process rules, e.g., deletion rules.

² Cook (1969:127) contrasts derivational with inflectional affixes as being "more numerous, but with limited distribution ... Derivational paradigms tend to be ill-defined, heterogenous, and only define single words."

associated noun incorporation with verb compounding by characterizing noun incorporation as, "but a particular case of verb composition ...". Furthermore, he described a general constraint on noun incorporation in similar terms to our general constraint on serial constructions as follows,

It can only be suggested that what may be called typical or characteristic activities, that is, those in which activity and object are found regularly conjoined in experience ... tend to be expressed by verbs with incorporated objects, whereas accidental or indifferent activities ... are rendered by verbs with independent, syntactically determined nouns. It must be admitted, however, that a hard and fast line between 'characteristic' and 'accidental' activities would be difficult to draw. (Sapir 1911:264)

More recently Lord (1973:269) has made similar observations on the constraints in serial verb constructions. Longacre (1976:150ff) employs a similar concept in his notion of 'Expectancy Chain' which relates to "actions which customarily occur in sequence." Longacre does not apply the notion to serial verbs, but he does use it in his discussions of the interclausal semantic notion of 'Frustrated Succession'.

a. SERIAL VERB ROOT CONSTRUCTIONS

Since there is no nonarbitrary way to structurally distinguish derivational constructions from nonderivational serial ones, this section will be organized essentially on a semantic basis. The sequences of roots which resemble predicates of so-called Merged Clauses will be discussed first, followed by discussions of successively more cohesive types of verb root sequences.

1) SEQUENCES OF ROOTS AS PREDICATES OF MERGED CLAUSES

The semantic relationships between simple verb roots include temporal relationships (simultaneity and sequentiality, i.e., simple sequence and cause-effect sequence) and a head-modifier relationship.

Temporal Relationships

Juxtaposed verb roots which are related temporally may express simultaneous or sequential states or events. As with all serial constructions, only roots expressing commonly associated states or events may be juxtaposed in the verb stem.¹

27. grha - nur - mē - m
 dance - cry-R.PST-3PL
 'They danced {while they} cried.'
 {and then, }

The events expressed by the verb roots in example 27 are commonly associated in a simultaneous relationship and thus the simultaneous interpretation is preferred. Examples for which a sequential interpretation is preferred or for which there is no preference are given in example 28 below.

- 28(a). yimar kēmburur muh - hambre - mē - r - r mīs - n
 man possum climb - search-R.PST-3SM-3SM tree-S.SET
 .for
 'A man climbed a tree {and searched} for a possum.'
 {searching}
- (b). hoe - toweh - mē - r
 sleep-dream-R.PST-3SM
 'He slept and dreamt.'

The distinction between a simple sequence of events and a cause-effect relationship is a subtle one, but it is possible to make such a distinction in many cases. The semantic commonality between sequentially associated events and cause-effect is obvious. Cause-effect relationships involve a sequence of events which is interpreted in such a way as to attribute to the chronologically prior event the role of being the cause of the subsequent event. In the clearest cases of

¹For unconventional or incidental events, verb roots are separated minimally by an adverbial clause subordinating suffix. Refer to the discussion of adverbial clauses in Section IX.C.

cause-effect, the Undergoer of the first verb root is the Actor of the second root. A cause and effect relationship is illustrated by the examples in 29.¹

29(a). wifërt fîr - gënNgî- më - t - a
 wind blow - cold-R.PST-3SF- 1S
'The wind blew (on) me (and) I was cold.'

(b). tat - noh - më - an - r
 hit - die-R.PST-1S -3SM
'I killed him.'

What is 'Commonly Associated'?

As Sapir (1911) noted, the concept of 'commonly associated' is difficult to define. It is not a problem which is restricted to serial verb constructions, however, for many primitive lexical verbs are also abstractions of commonly associated events or sequences of states. There is no way to define linguistically what those commonly associated events or states are; one must simply list them in a dictionary. The fact that a given language may have a dozen different verb roots to describe a dozen ways of 'carrying' is simply the result of commonly recurring and/or particularly functional patterns of activity within the speech community. Each verb root is encoding a regular pattern of behaviour comprising a complex of configurations and/or sequences of states of two or more objects.

Similarly, defining what are and what are not commonly associated events for serial verb constructions is ultimately impossible on pure linguistic criteria. Commonly associated simultaneous events are those which are commonly encountered together in Alambhak society. Commonly associated sequences of states or events often involve states or events which are purposes for, or reasons or causes of other states or events as in examples 28(a) and 29 above.

¹ Constraints on interpretation are related to constraints on case frames of serial verbs and the types of roots which may co-occur and in what order. These factors are discussed in detail in Section VII.C.2.e.

Head-modifier Relationships

Even though there is no clear-cut semantic distinction between serial verb constructions of the head-modifier type and the verb stem construction which is manifested by a verb root plus an adverbial root (Section 2).), the head-modifier constructions are discussed separately to highlight some of the structural differences and to emphasize the nature of the structural continuum that is evident with serial verb constructions.

Structurally head-modifier type serial constructions are composed of two verb roots, the second of which being a stative, action, or process verb, modifies the first root. Since the modifying roots are common verb roots, they may also be interpreted as being temporally related to the first root.¹ Example 30 has two possible interpretations.

30. dbëhna - noh - më - r
 sick - die -R.PST-3SM
 '*He was* {*deathly sick*}.'
 {*sick and died*}

As a head-modifier construction, the man was deathly sick but did not actually die. As a sequential serial construction, his sickness did in fact result in his death.

Modifier-head Relationships

Verb roots in the reverse order from the more common head-modifier order have been observed. Sequences of roots which could be related either temporally or as head-modifier may express the modifying verb root first. Thus example 31 is structurally grammatical and semantically unambiguous, since the sequential interpretation is not possible due to the meanings of the lexical items.

¹ This type of ambiguity is not likely with verb-root plus aspectual-root constructions since the aspectual verb roots are not common independent verbs. In constructions with bound aspectuals, the ambiguity is impossible.

31. noh - dbëhna - më - r
 die - sick - R.PST-3SM
 '*He was deathly sick.*'

2). ASPECTUALS

More than thirty roots function as aspectual markers in a verb stem. The relative ordering of morphemes and manifestations of function slots is given in the display of the verb stem (Table 70).

The thirty-one aspectual roots are classified below with general definitions. Examples in 32 illustrate minimal and expanded patterns. The distributional potential of the aspects varies greatly. All of the semantic constraints on co-occurrences have not been specified here.

(a) Adverbial aspects (Aspect₁)

(1) Emotive

- bëbra '*desiderative*'
 difrën '*anxiously*'

(2) Speed

- dimandi '*quickly*'
 yow '*slowly*'

(3) Value

- foray '*empty, of no consequence*'
 beb '*badly*'
 nheh '*feignedly*'

(4) Miscellaneous

- piray '*very*'
 af '*prolative, indicating the separation of participants following the event which is described by the predicate*' (PROL)
 fru '*prolific*'
 nfë '*restfully*'
 rafë '*hinderingly*'
 rhti '*trickingly, testingly*'

Table 70: Verb Stem Construction

functions	<u>± Derivation</u>	+ Core	<u>± Asp₁</u>	<u>± Asp₂</u>	<u>± Asp₃</u>	<u>± Asp₄</u>	<u>± Derivation</u>
exponents	<u>Causative</u>	one or more juxtaposed v. roots	adverbial roots	Spatial Aspect roots	Auxiliary roots	Temporal Aspect roots	<u>Benefactive</u> (-hay) (-nho)
	(hay- 'give')	v. stem					
	(yak- 'get')	n. root adj. root					
	(ha-)	Time word root					
	(ka-)						
	<u>Reciprocal</u>						
(na-)							

Notes: The noun root, adjective root, and Time Word root manifest the Core function without the potential of hosting derivational or aspectual slots. A noun root occurs initially (cf. Section B.3.b) and an adjective root or Time Word root occurs non-initially in a sequence of juxtaposed stems (cf. Sections B.3.c and d). The Aspect₁ slot may be repeated and an imperfective-like Temporal Aspect root (Aspect₄) may be followed by the Cessative Temporal Aspect in a repetition of the Aspect₄ slot or vice-versa. The Aspect₃ slot may permute to any post-head position.

Derived stems cannot be embedded into derived stems of the same type. Only one embedding of a stem into another verb stem is allowed. A Reciprocal (derived) stem cannot be embedded. Only Aspect₃ and/or Aspect₄ occur as aspects of an embedded stem which has an aspect slot associated with it. These allowable readings of the verb stem construction are illustrated in example 33. Other constraints on serial constructions are discussed in Sections B.3.a.6).

With Temporal Aspect

- (c). yënr nur - hasë - më - r
 child cry-DUR - R.PST - 3SM
 'A child cried for some time.'

With Auxiliary Aspect

- (d). yënr muh - tita - më - r - t
 child climb-unsuc-R.PST-3SM - 3SF
 'A child tried but failed to climb it.'

Expanded Form

- (e). Asp₁ Asp₂ Asp₄
 yënr nur - nheh - hëtfas - hasë - më - r
 child cry-feignedly-pl.to pl.-DUR-R.PST -3SM
 'A child cried feignedly from place to place for
 some time'

Examples in 33 illustrate more complicated constructions; in some cases patterns of embedding require constituent analysis within the verb stem.

(With Repeated Aspect₁):

- 33(a). Verb Stem
 pïtha - rhti - yahiya - fora - më - r
 talk - trick - noisily- empty-R.PST-3SM
 'He talked trickingly and noisily with no point.'

(With Juxtapose roots):

- (b). Verb Stem
Core Asp₁
 tandhi - ak - ni - dfrën - më - t - m
 cook - get - go-anxiously-R.PST-3SF-3PL
 'She cooked, got them (and) went anxiously.'

(With Repeated Aspect₄):

- (c) .
- | | | | | |
|-----|-----------|------------------|------------------|---------------------|
| | Verb Stem | | | |
| | | Asp ₄ | Asp ₄ | |
| mar | dañr | hiŋna | timbhë | - hakruṭ - wë - nëm |
| sun | middle | work | - cessative- | HAB - IMPF - 1PL |
- 'We habitually stop working at midday.'*

(With Embedded Stem):

- (d)
- | | | | | |
|----------|----------------------|---------|------|---------|
| | Verb Stem | | | |
| | Der. | Core | | |
| | | VB Stem | | |
| hay | - bro | - tay | - më | - r - r |
| CAUS-big | - PROC-R.PST-3SM-3SM | | | |
- 'He caused him to become big.'*

(With Embedded Stem Plus Aspect₃):

- (e)
- | | | | | |
|-------|--------------|------------------|------------------|-----|
| | Core | | Asp ₃ | |
| | Verb Stem | | | |
| | Core | Asp ₄ | | |
| hiŋna | - timbhë | - tita | - më | - m |
| work | - cessative- | unsucces- | R.PST-3PL | |
- 'They tried unsuccessfully to stop working.'*

3). DERIVATIONAL PROCESSES: CAUSATIVE, BENEFACTIVE, AND RECIPROCAL

It has been stated that derivational and serial constructions in Alamlak form part of a structural continuum. This can be seen by examining the exponents of the derivational slots in Table 70. Hay 'give' may function as a verb root in a serial construction having a sequential or simultaneous temporal relationship with another root or roots. Some sequential constructions imply a cause-effect relationship between two intransitive roots, and hay 'give' also frequently functions as the first verb root in a cause-effect serial

construction. Hay has been generalized as a causative formative with some verb roots where the meaning 'give' has been lost entirely. The distinction, then, between the Core function of hay 'give' in a serial construction and its derivational function as a causative formative is based on its co-occurrence with certain verb roots. As such, the close relationship of serial verb constructions composed of juxtaposed verb roots and derived constructions composed of derivational affixes (in some cases transparently deriving from verb roots) plus verb roots is obvious.

Causative and benefactive constructions will be discussed together in this section due to certain formal and semantic similarities between the two types, although the synthetic causative constructions will dominate the discussion.

Analytic causative constructions will be included here along with the synthetic causatives. This will allow us to see the entire semantic range covered by the various causative constructions. We will attempt to make explicit the semantic implications of various construction types and causative markers.

Causatives

Table 71 outlines the types of causative constructions and the semantic implications of each type. The table is organized to demonstrate the progression from synthetic to analytic structures.

Table 71: Causatives

<u>Causative Types</u>	<u>Description, Definition, Examples</u>	
I. <u>Synthetic Causatives</u> (<u>Derived stems</u>)		
1. <u>Direct Physical Causative (DP.CAUS):</u>	<u>Der.</u>	<u>Core</u>
	ka-	case frame 1 and 4 verb roots ¹
<p>The Actor (i.e., causer) causes the effect on the Undergoer (i.e., the causee) by doing something involving physical contact with the Undergoer. The Undergoer is only a passive participant, that is, he either did not intend to participate in the happening or he was unable to do so under his own power.</p>		
<p>a. ka - fkne - mē - r - m DP.CAUS-enter-R.PST-3SM-3PL <i>'He caused them to enter (something) by physically taking them.'</i></p>		
2. <u>Direct Event Causative (DE.CAUS):</u>	<u>Der.</u>	<u>Core</u>
	ha-	case frame 1 and 4 verb roots
<p>Something (x) happens to the causee (or the causee does x) because the same thing (x) happens to the causer (or the causer does x) or because a similar thing (y) happens to the causer (or the causer does y) where y involves a feature in common to both x and y. That which happens to the causer and causee (or that which they do) occurs at or near the same time and while the causer and causee are in physical proximity.</p>		
<p>b. ha - fkne - mē - r - m DE.CAUS-enter-R.PST-3SM-3PL <i>'He caused them to enter (something) by entering with them.'</i></p>		
<p>A common usage of this causative involves the causer and causee in the same event (necessarily at the same time) and in physical contact such as in example c.</p>		
<p>c. mi - yohita - t ha - suh - mē - t - r tree-branch- 3SF DE.CAUS-fall-R.PST-3SF-3SM <i>'The tree branch caused him to fall by falling with him (e.g., by breaking as he stood on it).'</i></p>		

¹Cf. VII.B.2.a. for a description of case frames of verbs,

Table 71 (cont.):

An example involving the causer in an action which includes only a feature of the action of the causee is provided in example c. Here the causer may be carrying the object (them) up an incline, or simply lifting them up with his hand; in the latter case the action of the causer and that of the causee share only the feature of ascension.

- d. yima - r ha - muh - mē - r - m
 person-3SM DE.CAUS-ascend-R.PST-3SM-3PL
'A man lifted them up.'

3. Direct Causative
(D.CAUS):

Der.	Core
kak- (lit) 'get'	case frame 1,2,3,4,
hay- (lit) 'give'	and 5 verb roots

The causer is the means of the effect which is predicated of the Undergoer. The causer is involved in close proximity with the Undergoer when the effect occurs.

- e. yarmu - tha - t kak - kkah - mē - t - a
 (tree -skin-3SF D.CAUS-hot-R.PST-3SF- 1S
 var.)
'The yarmu bark blanket made me hot.'
- f. hi¹nu - t doh - t hay ni¹ - mē - t - t
 high -3SF canoe-3SF D.CAUS-go-R.PST-3SF-3SF
 water
'The high water took (away) a canoe.'

II. Analytic Causatives
(Serial verbs)

1. Indirect Causative (I.CAUS)

Core	
{ case frame 1,2,3,4 and 5 verb roots hay- 'give' }	+ case frame 1,2,3,4, and 5 verb roots

The causer of which the first verb root is predicated (Actor of the construction) causes the effect (predicated of the Undergoer by the second root). The effect need not overlap or occur in immediate succession with the cause and the two participants need not be at the same place when the effect takes place.

¹Word-medially the verb root i 'go' sometimes exhibits the allomorph ni,

Table 71: (cont.)

-
- g. yima - r hay - noh - mē - r - a
 person-3SM give-unconsc-R.PST-3SM-1S
'A man gave me (something) (causing) me (to become) unconscious.'
- h. wifër - t ffr - gënNgí - mē - t - a
 wind -3SF blow- cold -R.PST-3SF- 1S
'The wind blew (on) me (causing) me (to be) cold.'
-

Comparing the four types of causative expressions semantically, several defining features emerge. Causatives are distinguished according to how directly or indirectly the causer is involved in the situation; that distinction implies varying degrees of involvement of the causee in the resulting effect. Cole (n.d.) has noted these features of causatives in a number of unrelated languages.

The notions of indirect and direct causation can be made more explicit in terms of spatial and temporal orientations and the congruence of the cause and the effect. The direct causatives imply close physical proximity between causer and causee with the predications involved in the cause and the effect occurring at or near the same time. The involvement of the causee refers to his own intention or ability to participate in the effect. With direct causatives the effect is either an automatic result (involving entities with no volition or in circumstances in which they cannot exercise their volition), or one in which the causee did not choose (without reluctance) to participate in the effect.

Direct causatives can be further distinguished. The Direct Event Causative (ha-) construction implies close physical proximity and the same time reference. The requirement of congruent time reference of the cause and effect events is stricter with this construction than with other direct causatives since both events must either be the same or at least share crucial features while occurring simultaneously. Thus in example d in Table 71, while the causer himself may not have

ascended bodily with the causee, some part of him (e.g., his arms) did ascend with the causee. Physical proximity is required but the requirement is not as exaggerated as it is with the ka- construction. For example, ha-siña (cause-rise) may imply that the causer stood up, causing the causee to automatically rise because they were in some direct physical contact; in another context, however, the causer may have stood up which, due to certain circumstances, forced the causee to stand alongside the causer. The physical contact is not required but the congruence of events is required with the ha- construction.

The Direct Physical Causative (ka-) construction, on the other hand, is more strict with the physical proximity requirement than with the congruence of the events. With this construction close physical proximity is strictly interpreted as physical contact. The ka- construction can be considered to be the most direct of the causatives since the cause and effect must occur at the same time, the causer and causee must be in physical contact, and the causee exercises less of a choice concerning his participation in the effect than with other constructions. The last point can be illustrated by comparing ha- and ka- constructions in examples a and b in Table 71.

Structurally, there is a general correlation with the degree of synthesis in causative constructions and the degree of direct causation. The analytic construction encodes an indirect causative. The synthetic constructions are more strict about the temporal and spatial relationships of the cause and effect and causer with causee. Among the synthetic structures themselves, those with transparent verb roots as causative markers are less strict than the variations with causative markers with no such apparent relationship to serial verb constructions.

Peter Cole (n.d.) has tentatively suggested that there are semantic correlates to structural variations in causative constructions, e.g., variations of the grammatical role chosen for the causee. The basic semantic parameter involved in Cole's discussion is the degree of control the causee retains

in the resulting predicate. For example, the causee which automatically undergoes the effect of the predicate without opportunity for choosing or not choosing to participate exercises no control in the resulting predicate. This parameter and its correlate, the degree of involvement of the causer, have been associated with types of causatives in general by Comrie (1978) as illustrated in Table 72.

Table 72: Semantic Correlates of
Causative Types (Comrie 1978)

Degree of Direct Involvement of Causer	Type of Construction	Degree of Control Retained by the Causee
indirect	analytic	high control
↓	synthetic	
direct	lexical	low control

The Alambhak data generally support the schema in Table 72. Direct involvement of the causer can be measured in terms of the temporal orientation of the cause and effect and the physical proximity of the causer and causee. The control retained by the causee is measured in terms of the causee's ability or opportunity to exercise a choice concerning his own participation in the resulting predicate. The correlation of indirect cause with high control by the causee and direct cause with low control by the causee is a predictable relationship. The Alambhak system focuses on the degree of direct involvement by the causer, encoded by different causative formatives.

Shibatani (1976) has discussed causation in English in similar semantic terms. He has characterized the most direct causation in English as the "manipulative causative" which involves physical manipulation of the causee by the causer. This category (for lexical causatives) in English is comparable to the Alambhak Direct Physical Causative for the synthetic ka-

construction. At least two more degrees of causer involvement (Indirect, Direct and Direct Event Causatives) are distinguished for Alamlak. ¹

Benefactives

The two benefactive formatives (cf. Table 70) are -hay 'indirect benefactive' (from hay 'give') and -nho 'direct benefactive'. The irregular allomorphs of -hay are similar to those of the verb 'to give'. -yahu occurs in Immediate past and present tenses compared to the forms of 'give' fahu and kahu respectively. This formal difference distinguishes the benefactive from a serial construction with 'give' in a core function whereas, the two constructions are potentially ambiguous in other tenses.

Parallels between causative and benefactive constructions are obvious. One of the formatives is the same (hav 'give' prefixed as a causative and suffixed as a benefactive) and similar semantic features characterize both. As with causatives, Indirect and Direct Benefactive are measured in terms of temporal orientation and physical proximity of the two participants and whether or not they are engaged in the same event. Both causee and beneficiary are encoded by the Inner Object. ²

Indirect Benefactive

The Indirect Benefactive does not require the initial

¹There is some suggestion from Shibatani's data that English distinguishes finer degrees of causer involvement than his "directive causation" category suggests. Consider, for example, the difference between the use of auxiliaries 'have' and 'make' in Shibatani's (1976:32) examples:

(58)a. John made the chair move.

*John had the chair move.

The 'had' causative requires an animate causee, which may suggest a less-direct causer than with 'made' which may host an inanimate causee.

²The Inner Object is the NP which is unmarked for case and coreferenced by the second Person marker on the verb, i.e., the Undergoer marker. Inner Object encodes the Patient NP of a two-place clause and the Affective, or Recipient, NP of a three-place clause

event and its subsequent effect to be experienced at the same time even though that would commonly be the case. Neither is the close physical proximity of the benefactor and beneficiary a necessary feature of the Indirect Benefactive. It simply implies that something happened to the actor or he did something voluntarily which had a good or bad effect on the beneficiary (depending on the meaning of the verb root in the nucleus or depending on the wider context in the case of verbs which are neutral with respect to the effect on the beneficiary).

The notion of good effect, or benefit, can be made more explicit. With multi-place verbs, the benefit may be substitutionary; that is, the benefactor does something so that the beneficiary does not have to do it himself. In all cases, including basic intransitives, the beneficiary is affected physically or psychologically (or both).

Direct Benefactive

The Direct Benefactive implies that both the event and the effect happen at the same time and that the benefactor and beneficiary are in close physical proximity. Furthermore, like the Direct Event Causative, this benefactive implies that both the actor and the beneficiary are engaged in the same state or event. Finally, the actor intentionally does something which is always intended to be for the good of the beneficiary.

The Indirect Benefactive (I.BEN) and Direct Benefactive (D.BEN) are illustrated in the examples in 34. Suh 'fall' in 34(a) implies a good effect; noh 'die' in 34(b) implies a bad effect, and tu 'throw' in 34(c) is neutral with respect to its good or bad effect.

34(a). suh - hay - mē - r - m
 fall-I.BEN-R.PST -3SM-3PL
 '*He fell with a good effect on them.*'

(b). noh - hay - mē - r - m
 die-I.BEN-R.PST-3SM-3PL
 '*He died with a bad effect on them.*'

- (c). kēfrat tu - hay - mē - r - r
spear throw-I.BEN-R.PST-3SM-3SM

{ 'He threw the spear to him for his benefit.'
(such as to a defenseless man facing a wild pig.)
'He threw the spear to his detriment.'
(such as to the pig, the implication being that it
was wounded or killed.) }

- (d). suh - nho - mē - r - r
fall-D.BEN-R.PST-3SM-3SM

'He fell purposely with him for his benefit.'

Reciprocal

The Reciprocal prefix *na-* is a de-transitivizing prefix. It occurs with basic or derived transitive verbs with only one non-singular (Actor) participant marked on the verb.

Examples in 35 illustrate the reciprocal form of basic transitive verbs.

- 35(a). maruham na - hay - mē - f
money REC-give-R.PST-3D

'They (two) gave money to each other.'

- (b). na - hīti - mē - m
REC-see-R.PST-3PL

'They saw each other.'

When a derived reciprocal stem occurs in a serial construction in a sequence of stems or when another stem is embedded in the reciprocal construction (cf. Table 70), the same constraints on the form of the predicate apply, i.e. only the actor NP's may be coreferenced on the predicate. Examples in 36 illustrate the reciprocal in a serial construction and in a derived reciprocal-causative verb.

36(a).

Stem₁
Stem₂

yën - f miyt muh - na - tat - më - f

child-3D tree climb - REC - hit-R.PST-3D

'(Two) children climbed a tree (and) hit each other.'

(b).

Reciprocal Stem

Causative Stem

yemrëm na - hay - dbëhna - më - m

meat REC-give - sick - R.PST-3PL

'They gave meat to each other (and caused) each other to be sick.'

4). COMPOUNDING

The approach to compounds taken here is similar to the discussion of 'compound' nouns (pp. 191ff). In general there is no discrete distinction between compound stems and the serial verb construction. Compound verbs are located toward the end of a continuum of varying degrees of cohesion. The point at which a serial verb construction deserves a place in the lexicon as a lexical compound is dependent upon the frequency of co-occurrence of two verb roots in a particular context and the degree to which the meaning of the construction has become idiomatic. An example of an idiomatic compound stem is given in example 37(a).

37(a).

Stem

kak - yirona - më - t

get-feel.pain-R.PST-3SF

(= feel birth pangs)

'She had birth pangs.'

Compare example (a) with the serial verb construction in example (b):

(b). hohora - t kak - yirona - më - t - t

thorn-3SF get-feel.pain-R.PST-3SF-3SF

'She got/held the thorn and felt pain.'

Serial verb constructions are paraphrasable by sentences whereas idiomatic compounds are not, e.g., example 38 can be a paraphrase of example 37(b), but no such paraphrase is available for example 37(a).

38. hohra - t yak - hatë, yirona - më - t
 thorn-3SF get - SA feel.pain-R.PST-3SF
 *'Having gotten (ahold of) the thorn (same Actor),
 she felt pain.'*

In the case of example 37(a) one of the verb roots (kak 'get') does not individually bear a semantic relation to any NP in the clause. This is one reason why the meaning of the idiom cannot be derived from the combined meanings of its roots. This has been illustrated by the lack of sentence-level paraphrase potential for the idiom in contrast to the serial verb construction (example 37(b)).

Other compound verbs, while idiomatic to a certain degree, are more similar to serial verb constructions. These cases can be simply referred to as compound verbs. One of the differences between these compound verbs and pure idioms is that each verb root in a compound still bears a semantic relationship individually to an NP in the clause. Consider, for example, number 39:

39. këfra - e fëhr tu - fīnah - më - an - r
 spear -INS pig throw-arrive-R.PST-1S-3SM
 'I shot the pig with a spear.'

The compound verb in example 39 has an idiomatic interpretation in that the arrival of the spear at the pig can be understood only in a very specific way, a way in which the root (fīnah 'arrive') is not understood in other contexts. The idiomatic meaning and its abstraction from the component roots of the construction is much more transparent, however, than with pure idioms. Part of the reason for this is that each verb root still bears a semantic relationship to an NP in the clause. Thus someone threw the spear and the spear arrived.

While compound verbs contrast with idioms in that respect, they also contrast with serial verb constructions in that the case frame of the compound cannot be deduced from a combination of the case frames of the individual roots. The 'spear', Patient of 'throw' and Actor of 'arrive', is Instrument of the compound; 'pig' is Patient of the compound but only Locative of the root 'arrive'.

Like idioms, compounds cannot be expressed by sentence-level paraphrases to mean exactly the same thing.

40. kēfra - t tu - mē - t - an - t fīnah - mē - t - r
 spear -3SF throw-R.PST-DA-1S-3SF arrive-R.PST-3SF-3SM
 'I threw the spear (Different Actor) (and) it arrived
 at the pig.'

The statement of example 40 does not imply that the spear pierced the pig as example 39 does. Compared to idioms, however, it is at least possible to get close to the meaning of the compound by the paraphrase since the individual roots can be matched with an NP in the clause. A paraphrase of example 37(a) cannot be formulated even with a different meaning because there is no NP in the clause that could fill the patient role of kak 'get'.

5). REDUPLICATION

Two construction types can be discussed under the rubric of reduplication. Stems formed by reduplication are the most cohesive of the serial verb constructions. A repeated verb root may be either juxtaposed or joined by a ligature (LIG).

Juxtaposed repeated verb roots indicate an iterative predication with non-stative verbs and a durative aspect with stative verbs. Onomatopoeic verb roots are usually reduplicated. Being imitations of sounds which are typically made by a repeated action, they signal the repetition by reduplication of the root. A non-onomatopoeic non-stative root which is typically reduplicated is illustrated in example 41.

41. bur - bur - na - hanit - wë - r - m
 drop-drop - do - PROG -IMPF -3SM-3PL
'He is dropping them along the way.'

Reduplicated stative roots signify an extended duration aspect, e.g.,

42. hip - hip - w - a
 perspire-perspire-IMPF-1S
'I am continuing to perspire.'

Repeated verb roots with the conjoining ligature ba indicate an intensification of the meaning of the repeated verb root.

A conjoined reduplicated verb stem is typically distributed as a non-initial stem in a serial verb construction.

43. $\overbrace{\text{hiNgna}}$ - $\overbrace{\text{marña - ba - marña}}$ - më - r
 work - straight -LIG - straight-R.PST-3SM
'He worked very well.'

6). CONSTRAINTS ON SERIAL VERBS AND COMPOUNDS

Semantic constraints on serial-type constructions have some formal (structural and distributional) effects. The more semantically constrained a structure is, the more internally coherent it is.

a). SERIAL VERBS

Case Frame

The nuclear participants coreferenced in a serial construction bear semantic relations to individual verb roots. In general each root must have the same Actor except in cases of cause-effect and part-whole relationships. These and other clause-level constraints are discussed in detail in Section VII.C.2.e.

Co-occurrence of Roots

Co-occurrence restrictions on component verb roots are defined culturally by the general rule that only commonly associated events can be consolidated into a single clause by the serial verb construction as discussed on pp.238ff. The type of events which can be combined as "commonly-associated events" include events which are related in terms of event-purpose, event-result, and cause-effect. Even these notions can only be defined specifically for a given culture according to the world view of that culture. Specifically, events like coming and going are commonly associated with just about any situation. With other events it is often impossible to predict allowable combinations. For example, sentence 44(a) is unacceptable as a serial construction; even though the two events often occur in the same situation, they are not associated as a single event or process. Such a situation must be expressed by separate clauses as in example 44(b).

44(a) *hodaryt yoht yak - fët - më - t - t
 axe string get-string-R.PST-3SF-3SF
 .bag .from
 .head

(b). hodaryt yak - hatë yoht fët - më - t - t
 axe get-SA string string-R.PST-3SF-3SF
 .bag .from
 .head

'Having gotten the axe (Same Actor), she strung the string bag from her head.'

Tense-Aspect

The tense-aspect (outside the verb stem) is the same for all verb roots in a serial construction. The same constraint governs a sequence of predicates conjoined by subordination at the sentence level.

Elevationals

The scope of the Elevational prefix covers all roots unless an Elevational suffix occurs, in which case the prefix

applies to the first root(s) and the suffix applies to the last root. In subordinate clauses, by contrast, an Elevational prefix applies only to the predicate of which it is a constituent part and does not extend to the next predicate. By this feature the serial verb construction acts like a single complex predicate (as of a 'Merged Clause').

45(a). wa - rim - ak - ni - n - m
 IMPER-ELEV - get - go - 2S-3PL
 '*Get them (and) go away from me.*'

(b). wa - yarim - ak - ni - n - m - ko
 IMPER-ELEV - get - go-2S -3PL-ELEV
 '*Get them toward me (and) go up (there).*'

Illocutionary Force

Similarly, all verb roots in a serial construction must exhibit the same illocutionary force, thus, the commands in example 45 apply both 'getting' and 'going'.

This constraint is not a requirement for subordinate clauses where the illocutionary force may change between some subordinate clauses and their associated main clause (cf. the discussion of the Conditional Sentence in Section VIII.C.1.b.).

Negative

Only one negative word may occur with a serial verb construction (as it is a single predicate), but its scope may cover any one or any combination of verb roots (as if they were sequences of predicates). For example, sentence 46(a) could be followed by any of the sentences (b) - (g) which clarify just which verb root(s) the negative in sentence (a) applied to.

46(a). ritm fiñji tandhi - ak - ni - r - mē - t - m
 insects NEG roast - get - go -IRR-R.PST-3SF-3PL
 '*She did not roast (and) get the insects (and) go.*'

(Negative on 'roast')

- (b). nifrim haynimëtm
 new she.took.them
 (uncooked)

(Negative on 'get')

- (c). tandhihëttaynhatë yimët
 having.roasted.(and).left.(them) she.went

(Negative on 'go')

- (d) yohre tandhiyakitëhhasiwëtm
 still she.is.roasting.(and).holding.them

(Negative on 'roast' and 'get')

- (e). nifrim hëttaynhatë yimët
 new SA.having.left.(them) she.went

(Negative on 'get' and 'go')

- (f). tandhihatë rohhasëmët
 SA.having.roasted.(them) she.was.remaining

(Negative on all three roots)

- (g). yohre tandhitwëtm
 still she.is.roasting.them.

b) COMPOUNDS AND IDIOMS

Unlike a serial verb construction, the nuclear participants in clauses with a compound or idiomatic verb stem in the predicate do not always bear a semantic relation to individual roots but have a role relation to the verb complex as a whole. See examples 37 and 39 and the discussion relating to them.

As with serial constructions, a compound verb or idiom must have only one Actor.

Co-occurrence restrictions for compound verbs are the same as they are for serial constructions, viz., only commonly associated events may combine. Idioms are not semantically analysable into their component verb roots.

As with serial constructions, the scope of tense-aspect and illocutionary force covers all verb roots in both compounds and idioms.

Compounds and idioms are more internally cohesive than serial constructions with respect to the scope of the negative and Elevational markers. The negative covers the entire complex verb; the Elevational prefix also covers the entire complex, and if an Elevational suffix occurs it must designate the same direction as does the prefix. These are not requirements in serial constructions.

b. NOUN INCORPORATION

The stem of the verb can be expanded to include a series of roots, one of which is a noun root (cf. Table 70). This phenomenon occurs to a limited extent in the stem of a verb in an independent clause and to a much greater degree in verbs of dependent clauses.

Independent Clauses

The most common noun root which may be incorporated into the verb stem of a predicate in an independent clause is the class of inalienably possessed nouns (i.e., body parts, names, and body odour). Other noun roots which are incorporated are generic or indefinite objects in a patient role in the clause.

Basic intransitive verbs may host two NPs with the inalienable possession coreferenced as Actor and the possessor as Undergoer in the specific role of Patient. The inalienable possession is encoded as Actor since its function as the origin (or cause) of the state, action, or process places it in more of an agentive role than the possessor plays (cf. a fuller discussion of inalienable possession in Section VII.C.2.d.). Example 47 illustrates clauses of this type.

- 47(a). yënr wurat yëhne-më - t - r moh - ohat - n
 child foot descend-R.PST-3SF-3SM hole-path - S.SET
 'A child('s) foot went down the hole on him.'

- 47(b). yënr ñuNgramt kına-më - t - r
 child throat dry-R.PST-3SF-3SM
 'A child('s) throat is dry on him.'

Example 48 exhibits the incorporated body part. The syntactic result of incorporation is that the incorporated noun occurs to the left of the first verb root; it can no longer be coreferenced on the verb; and it loses its own phrase terminator.

- 48(a). yënr wura-yëhne - më - r moh - ohat - n
 child foot-descent-R.PST-3SM hole-path -S.SET
 'A child went down into the hole (up to his) foot.'

- (b). yënr ñuNgram - kına - më - r
 child throat - dry - R.PST-3SM
 'A child is thirsty.'

A verb stem with an incorporated noun root may be bounded by verbal inflection as any other verb stem is as illustrated in example 49.

49. wa - yufa - yuta - n - r
 IMPER-name - call -2S -3SM
 'Call (his) name.'

That the incorporated body part is not a definite noun is substantiated by the fact that it cannot be modified so as to make it definite, e.g.,

50. * rërho ñuNgram - kına - më - r
 his throat - dry -R.PST-3SM

Inalienably possessed NPs as objects of transitive verbs may be incorporated in the same way. Consider the examples in 51.

51(a). nan-ho wura - t fufr - an - t
 1S -GEN foot-3SF cut -1S - 3SF
 '*I cut my foot.*'

(b). na wura - fufr - a
 1S foot - cut - 1S
 '*I cut (myself) (on the) foot.*'

Noun incorporation in independent clauses is fairly rare apart from the incorporation of inalienably Possessed nouns. Noun incorporation is much more frequent in dependent clauses as discussed in the next few pages. An instance of an incorporated generic patient noun root in a basic two-place clause is given in example 52.

52. naku - nta - më - f
 sago - pound - R.PST-3D
 '*They (two) pounded sago.*'

This particular example offers clear phonological evidence for noun incorporation (cf. example 117(b) in Chapter II).

The roots [naku] '*sago palm*' and [nita] '*pound*' with four phonetic syllables reduce to three syllables with the loss of the epenthetic vocoid of the first syllable of [nita].

Dependent Clauses

Noun roots may be incorporated into the verb stem of the predicates of relative clauses, (Non) Possessed Modifiers, (cf. Section IV.C.2.d.), and Nominal Clauses (cf. Section IV.C.2.f.). Incorporated nouns are not restricted to a particular class as they were when incorporated in predicates of independent clauses.

Generally, subjects of intransitive predicates, and objects of transitives may be incorporated. NP's with peripheral semantic roles (e.g., locatives) may be incorporated also.

Nouns must be generic or non-specific to be incorporated in Alamblak. This restriction derives from both the syntactic effects of noun incorporation and the pragmatic constraint allowing only commonly associated roots to serialize. The

syntactic effect referred to is that the incorporated root cannot manifest the person-number-gender terminator (a deictic feature of almost all other noun phrases), nor can it be coreferenced by the verb agreement system. In effect, the illocutors are deprived of powerful syntactic clues for identifying the referent of an incorporated noun. In the case of inalienably possessed NP's, the problem of the identification of the referent is minimal even without those deictic clues. It is for that reason that inalienably possessed NP's are readily incorporated. Similarly, there is no problem of referent identification when generic or non-specific things are being talked about. Therefore the loss of PNG marking and verbal cross referencing does not unduly impair communication. Pragmatically, the occurrence of a generic NP with a verb almost automatically implies a commonly occurring state or event; it is therefore the easiest type of noun to use to fulfil the general constraint of conjoining commonly associated elements in a serial construction.

It is important to emphasize that the primary constraint is the pragmatic one which restricts serialization to commonly associated elements. The constraint restricting most cases of incorporation to generic or non-specific nouns is secondary rather than primary. Not all cases of incorporation involve generic or non-specific nouns (e.g., incorporated inalienably possessed items). The constraint of common association, however, not only explains the fact that generic and non-specific nouns are most commonly incorporated, but it also explains the variation in acceptability and frequency of occurrence of incorporations of various body parts with certain verb roots. Mëfha-ka head-eat (= 'headache') is a common serialization since, although virtually any part of the body can be a source of pain, the head is a very frequent one. Serializations like example 51 (b) ., however, are not readily accepted by all Alambalak speakers. Too many things can be cut and one is no more likely than another to be associated with this frequent event.

The (Non) Possessed Modifier is particularly oriented to characterizing an NP by a typically occurring state or event. With that primary function, the (Non)Possessed Modifier is often

preferred for noun incorporation to other relative clause forms. Sentence 53(a) is quite acceptable but (b) with the Imperfective aspect is somewhat better, and Alamlak speakers clearly prefer the (Non)Possessed Modifier in (c) to either (a) or (b).

- 53(a). thi - was - mē yimar
 turtle-spear-R.PST man
 'the man who speared {some turtles}'
 { ? turtles }
- (b). thi - was - mē - w - a yimar
 turtle-spear-R.PST-IMPF-PRSUP man
 'the man who was spearing {turtles}'
 { some turtles }
- (c). thi - was - et yimar
 turtle-spear-POSSD man
 'the { turtle- } spearing man.'
 { *some turtles- }

One or another clause in example 51 may be selected for reasons which have nothing to do with the incorporated noun root (e.g., example (b) implies that the man no longer spears turtles). It is suggested here, however, that assuming appropriate contexts for each sentence, the (c) form is the most preferred because the incorporated noun is generic, and (b) is better than (a) because it is just as easy to interpret the noun root as generic as specific, whereas the noun in example (a) clearly favours the specific interpretation over the generic one. We conclude, therefore, that nouns used in a generic sense are preferred for incorporation.

In a similar way, Purpose Relative Clauses and Nominal Clauses are well suited to reporting generic situations.

- 54(a) fēh - tufinah - yuk ñam
 pig - shoot - PUR arrows
 'arrows for shooting pig.'

54(b). kuñ - hiNga - nef - t
 house-work - NOM - 3SF
 'house building'

In our discussion of noun incorporation, we have discussed several factors. The basic controlling factor, a functional constraint on all serial constructions, is that only commonly associated elements may be encoded by serial constructions. With incorporated nouns, the noun must be commonly associated with the predicate in real world events. Only classes of objects (generics and non-specifics), vis-à-vis unique individuals and specific objects, can form a common association with states or events meeting the general constraint on serial constructions. Thus, the observation that most incorporated nouns must be generic or non-specific is an effect of the general constraint on serial constructions rather than an independent constraint on noun incorporation.

We have also noted that noun incorporation in Alambalak is more common in dependent clauses than in independent clauses. This is not an independent arbitrary constraint either. It has been suggested by Frantz (1971) that incorporation has the effect of shifting the focus to the possessor in the case of incorporated body parts. In other words, an incorporated noun is backgrounded in the situation vis-à-vis other participants in the clause. A reflex of this effect is that incorporated nouns are not inflected for person, number, and gender, nor can they be coreferenced by the verb agreement system (which signals a role relationship between NP's and the predicate). Given that backgrounding is a function of incorporation, it is not an independent constraint that noun incorporation is much more frequent in dependent clauses than in independent clauses, since dependent clauses are semantically backgrounded vis-à-vis the predication of the matrix clause.

c. ADJECTIVE ROOT INCORPORATION

The verb stem may manifest a descriptive adjective as one of a series of roots (cf. Table 70 p. 244). The incorporated descriptive adjective follows the verb root which bears a

semantic role relationship with the NP with which the adjective is associated.

Verb serialization with an adjective root, i.e. adjective incorporation, may be compared to what has been called 'quantifier floating' in other languages. Quantifier floating has been discussed as a feature of the subject noun phrase of a clause in Keenan (1976:320);¹ it is discussed here as a process of adjective incorporation. It does not turn out to have any significance for the identification of the subject noun phrase but rather, like incorporated nouns, tends to associate patient NP's with the verb.

The set of NP's which can 'launch' modifiers into the verb stem resembles an 'ergative-like' pattern, with some variation. The so-called launching NP's in various clause types are enclosed in Table 73.

Table 73: Modifier Launching NP's

subject	object	1/2-place predicate
subject	object	two-place predicate
subject	Inner obj. Outer obj.	three-place predicate

The dotted line enclosing 'Inner Object' in a three-place clause indicates that the incorporated adjective may, in double function, refer to both objects, but it cannot modify the Inner Object (i.e., the recipient) without also modifying the Outer Object. The solid line around the subject and object of a basic 1/2-place clause indicates that the incorporated adjective may refer to either subject or object (the object being the NP

¹ Keenan's example of a clause with a floated quantifier is, "the boys all left". The same clause without the quantifier floated, or launched, is, "all the boys left".

*Quantifier of an In.Obj.NP of a three-place PRED

- (e). met-t yima - m fähr hay - buga-me - t - m
 woman-3SF person-3PL pig give-all-R.PST-3SF-3PL
 { *'The woman gave all the men the pig.'
 'the woman gave all the men all the pig.' }

Sentence 55(e) is only grammatical with the interpretation that the Outer Object is related to the incorporated adjective. The sentence necessarily implies that the pig was cut up into pieces and that the pieces were all given to the men.

Quantifier of an Out.Obj.NP of a Three-place PRED

- (f). met - t yima - r Out.Obj. fähm hay- buga - mē - t - r
 woman-3SF person-3SM pigs give-all-R.PST - 3SF-3SM
 'A woman gave a man all the pigs.'

Quant. of In. and Out. Obj.NP of a Three-place PRED

- (g). met - t yima - m In.Obj. Out.Obj. fähm hay - buga - mē - t - m
 woman-3SF person-3PL pigs give- all-R.PST-3SF-3PL
 'A woman gave all the men all the pigs.'

Only one adjective may relate to any single verb root even if it appears that more than one NP has 'launched' the same adjective into the verb. Thus only one adjective root occurs in example (g).

The scope of the incorporated adjective covers all verb roots to the left of the adjective. In example 56 the man put all of the fish into all of the baskets and the baskets were all full.

56. yima - r In.Obj. Out.Obj. jing - m yiram hēmbre-kih - buga- mē - r - m
 person-3SM basket-3PL fish put - full-all -R.PST-3SM-3PL
 .into
 'A man filled all (of) the baskets (with) all (of) the fish.'

Any category of adjective may be incorporated. The examples so far have incorporated the quantifier 'all'. A few examples will be given with other types of adjectives.

"Age" Descriptive Adjective

- 57(a). ginafm fa - nfri - mē - an - m
 grubs eat-new - R.PST-1S - 3PL
 'I ate grubs alive.'

"Physical Property" Descriptive Adjective

- (b). miyukham fa -nfri - me - an - m
 tree,fruit eat-new-R.PST -1S -3PL
 'I ate fruit raw.'

Thus far it has not been difficult to analyse the incorporated adjectives as floating adjectives which have been launched from an NP in the clause. Some constructions with incorporated adjectives cannot be analysed as floating adjectives, however, since the meaning which results from the serialization of verb root and adjective cannot be equated with the relationship between the same adjective and a head noun of an NP. Consider example 58:

"Dimension" Descriptive Adjective

58. yēnr fēhm hīti-bro - mē - r - m
 child pigs see-big-R.PST -3SM-3PL
 'A child saw pigs (as being) big.'
 (= 'Pigs appeared large to the child').

Example 58 is not semantically equivalent to its parallel sentence with the adjective in the noun phrase, (yēnr bro fēhm hītimērm, child big pigs he.saw.them 'A child saw big pigs.'). The speaker of sentence 58 is denying that the pigs which the child saw were big as pigs go, even though the child would have described them as being big.

Some incorporated adjectives combine with a verb root in a way which is very similar to two verb roots combining.

59. mītitēft teh-yukay - mē - an - t
 vine pull-long -R.PST-1S-3SF
 '*I stretched a vine out.*'
 (= '*I pulled a vine out straight.*')

While a vine which has been stretched out straight is a straight vine, example 59 is not an appropriate paraphrase for example 60 with the adjective in the noun phrase.

60. yukay mītitēf-t teh - mē - an - t
 long vine-3SF pull-R.PST-1S-3SF
 '*I pulled a long/straight vine.*'

An incorporated adjective of this type results in a serial verb which is very much like a sequential serial construction expressing cause and effect. The adjective in the noun phrase, however, expresses a quality of the Head noun which is already true of the noun.

In constructions such as example 59, the border between the grammatical categories of adjective and verb becomes very fuzzy.¹ We will not embark on a theoretical debate on the relationship between adjectives and verbs since such a discussion would digress too far from the purpose of this primarily descriptive work. The question of 'quantifier (or adjective) launching', however, can be fairly quickly dismissed as a cogent description of adjective incorporation as discussed here. The semantic shifts which occur between sentences like 'the child saw the big pigs, and 'the pigs appeared large to the child' prohibits the latter from being a derivative of the former.

¹ The semantic commonality of adjectives and verbs has long been recognized. While the syntax has neutralized the verb-adjective distinction in constructions like example 59, this fact does not force an analysis which merges adjectives and verbs at some abstract level only to derive surface structures which clearly distinguish the two categories by assigning to them distinct functions and forms in most contexts.

The final constraint on adjective incorporation is the general constraint of common association on all serial constructions. A serial construction such as 'pull-short' combines logically incompatible elements (in a context like example 59). But 'see-red' or other combinations which are not logically incompatible, are nonetheless unacceptable. These restrictions can only be culturally defined by a pragmatic constraint such as our general constraint on serial constructions.

d. TIME WORD ROOT INCORPORATION

An incorporated Time Word root (cf. III.9) follows the verb root in a verb stem. Semantically the Time Word functions like an aspect of the verb by indicating the extent of the predicate in terms of time.

61. yaw - krif - mē - r
 walk- after -R.PST-3SM
 .noon
'He walked until afternoon.'

C. Nonfinite Verb Phrases

Two independent nonfinite VP's are described below, the Copular and Existential VP.

1. Copular Verb Phrase

The general form of the Copular verb is displayed in Table 74.

Table 74: Copular VP

functions	+ Head	+ Copula	+ Terminator
exponents	nominal-verbal base (Table 18) POSS PH PUR REL CL (Non)POSSD Mod.	- <u>e</u>	(v.Table 66)

Copular verb forms are prolific. Among the few elements that do not manifest the Head are stative verbs and the existential verb. The semantic interpretation of the Copular verb is discussed in contrast with Equative constructions in Section VI.B.1. Briefly, the Copular verb predicates the identity of a subject in terms of the essence of that subject, in the case of non-verbal head constituents, and in terms of an identifying predication in the case of a verbal head constituent. It is a tenseless construction but inherently refers to the present time. Non-present expressions employ a form of the Equative Clause. Examples of these are given below.

62(a). kuñ - e - t
 house-COP-3SF
 '*It is a house.*'

(b). fëh-r yawym howit - e - r
 pig-3SM dogs bite -COP-3SM
 '*The pig is* { *(one) bitten by dogs*
 { *(one which) bites dogs* } '

(c). kuñ-t roh - mē - t
 house-3SF sitting-R.PST-3SF
 '*It was a house*'.

2. Existential Verb Phrase

The Existential verb predicates the existence of a subject. It is a tenseless construction and, like the Copular verb, non-present time expression employ the Equative clause form.

Table 75: Existential VP

functions	+ Proximity	+ Head	+ Terminator
exponents	<u>a-</u> 'near'	<u>të</u> ~	(v.Table 66)
	<u>u-</u> 'far'	<u>šë</u> 'be'	

The Existential verb is illustrated in example 63 below.

63(a). a - šë - r
near-is-3SM
'He is here.'

(b). tē - r
is-3SM
'He exists.'

Chapter VI

SYNTAX OF INDEPENDENT CLAUSES

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Chapter VI

SYNTAX OF INDEPENDENT CLAUSES

A. INTRODUCTION

There are two general types of clauses in Alambhak, dependent and independent. Independent clauses are those that may stand on their own as minimal sentences, in contrast to dependent clauses which may not. This chapter describes the structure of independent clauses; dependent clause types are discussed in Chapters VIII and IX. Dependent clauses which are embedded in the Noun Phrase have been discussed in Chapter IV.

In what follows, the general structures of independent clause types are discussed first, followed by a discussion of the peripheral and nuclear noun phrase constituents of the clause. Specifications of the form of the Verb Phrase (Chapter V) are discussed for the various structural types of clauses rather than being discussed in a separate section devoted to predicate types.

B. CLAUSE TYPES

The structure of independent clauses is described in terms of three parameters, viz., transitivity, declaration, and polarity. There are seven features of transitivity, three of declaration, and two of polarity. Clause types are defined by the intersection of these features as shown in Table 76.

The transitivity parameter as used in this chapter indicates various combinations of phrasal constituents of the clause, i.e., peripheral NP's, subject, objects, and predicate.

Table 76: Typology of Independent Clauses

		Transitivity						
		Copulative	Equative	1- or 2- Place Clause	2-Place Clause	2- or 3- Place Clause	3-Place Locative Clause	3-Place Clause
Mode Affirmative	Declarative	+	+	+	+	+	+	+
	Yes/No INTERR	+	+	+	+	+	+	+
	Content INTERR	+	+	+	+	+	+	+
Mode Negative	Declarative	+	+	+	+	+	+	+
	Yes/No INTERR	+	+	+	+	+	+	+
	Content INTERR	+	+	+	+	+	+	+

The Declaration parameter indicates whether the mode of the clause is a statement or one of two question types. This parameter overlays various feature specifications on the basic structure provided by the transitivity parameter usually without altering that basic structure. The polarity parameter specifies whether the mode of the clause is affirmative or negative. Negative polarity features usually affect the basic structure of the clause by adding function slots to it.

1. TRANSITIVITY PARAMETER

There are seven features in the transitivity parameter of clause types (Table 76). The traditional terms 'intransitive' and 'transitive' have not been employed here; they are discussed in Section VII.C.2 in terms of a complex of semantic features (with syntactic reflexes) whereby verbs may be classified and are not to be equated simply with the number of participants in the clause.

Table 77 indicates the NP's which occur in each clause type as defined by the transitivity parameter. The NP's for a given clause type cannot be specified meaningfully for Alambak in a context-free way. Table 77 specifies the constituents of clauses in a context in which the information in the clause is new to the hearer. In this context the pronominal Person markers on the verb are not sufficient indicators of third person referents of the clause participants and therefore the cognitively obligatory participants must be manifested as NP's in the clause.¹

¹ This condition is necessary for Alambak, as for other pronominalizing languages, since in contexts involving known information only the Equative Clause type still requires NP's to be manifested in the clause (i.e., the Outer Object). The other clause types may simply reference clause participants on the verb with no NP's manifested at all.

Table 77: Transitivity Features in Clause Types

		Function Slots					
		Periph. functions	Locative ¹	Subj.	Inner Object	Outer Object	Pred.
Transitivity	Copulative			+			+
	Equative	±		+		+	+
	1- or 2- Place (1/2) Clause	±		+	±		+
	2-Place (2) Clause	±		+	±	±	+
	2- or 3- Place (2/3) Clause	±		+	+	±	+
	3-Place LOC (3-LOC) Clause	±	[+ -]	+	[+ +]	[- +]	+
	3-Place Clause	±		+	+	+	+

Unmarked (Declarative, Affirmative) clauses are used below to illustrate each transitivity type. A display of each clause type is presented in Tables 78, 79, and 81-83. A general discussion of rules, e.g., co-occurrence restrictions, permutability, etc., will follow the presentation of the seven basic clause types.

a. COPULATIVE CLAUSE

The Copulative predicate predicates a state or identity of the subject. The predicate is manifested by an Existential or Copular Verb. The Head of the Copula VP Base is manifested by adjectives or verbs for stative predications and by nouns for identity predications.

¹The Locative function is subsumed under the periphery for all clause types other than the Three-place Locative Clause.

Table 78: Copulative Clause

Functions	+ Subject	+ Predicate
exponents	NP	Copular verb (cf. § V.C.)
	PNP	Existential verb (cf. § V.C.)
	∅ ¹	

1(a). yimar broer
man he.is.big
'The man is big.'

(b). yimar asër
man he.is.here
'The man is here.'

b. EQUATIVE CLAUSE

Table 79: Equative Clause

Functions	(Periphery)	+Subject	+Outer Object	+Predicate
exponents	Allative NP	(V.Table	NP	VP manifested
	Referent	78)	PNP	by classifi-
	G.Setting NP		Resemblance	catory verbs
	S.Setting NP		PH	

The Equative predicate identifies the subject as being

¹ Clause types have been described with cognitively obligatory NP's marked as syntactically obligatory. In many contexts the NP need not be manifested, however (cf. discussion in Chapter I p. 10 and in the footnote on p. 281). To account for those cases, a zero manifestation is allowed for in descriptions of clause types.

equivalent to the Outer Object either totally, e.g.,

2. Subj.
 Pianr yima yënr korhwër
 Pian person child he.sits
 'Pian is a human child.'

or in some partial (and unspecified) way, e.g.,

3. yënr tukia hafit korhwër
 child myself like he.sits
 'The child is like me.'

The Copulative (Table 78), while similar to the Equative, contrasts semantically with it. The Copulative predicates the identity of the subject in terms of what it is in essence. Compare the two clauses in example 4.

- 4(a). Copulative CL.
 kuñ - e - t
 house-COP-3SF
 'It is a house.'

- (b). Equative CL.
 kuñ - t korh - wë - t
 house-3SF sitting-IMPF.3SF
 'It is a house.'

The entity by the Copulative Clause (example (a)) is identified as a house on the basis of its formal and functional properties. The entity identified by the Equative Clause (example (b)) can be equated with a house because it shares some but not all of the formal and/or functional features of a typical house.

This contrast between Copulative and Equative Clauses is supported by the fact that Equative predicates but not Copulatives can appear in the Imperative mode.

5(a). Kaunsel wa - tēh = twa
 counsellor IMPER-standing-FUT.IRR
 'Be the counsellor!'

(b). *wa - Kaunsel - e
 IMPER - counsellor-COP

The Equative can be commanded to come about (presumably because of possible control over a situation by an addressee). The Copulative, however, is a description of essential identity which is not subject to the will of a potential addressee.

The exponents of the Predicate and Outer Object functions in the Equative Clause require further discussion.

Predicate Function of the Equative Clause

The predicate function is manifested by classificatory verbs. The two classificatory verbs are roh '*sitting*' and tēh '*standing*'. When these verbs are used in 1/2 place clauses to identify the location of the subject, then they also indicate its physical position (either sitting or standing). In the Equative Clause they are used metaphorically. Certain states are metaphorically related to a sitting or standing position much the same, for example, as 'to be seated' is in English with the installation of parliamentarians. Thus tēh '*standing*' is the appropriate classificatory verb in example 5(a) whereas roh '*sitting*' would not be appropriate.

The Actor pronominal reference marker must occur on the verb but the Undergoer marker cannot occur. (Refer to Section V.B.2 for a discussion of pronominal person markers).

Outer Object Function of the Equative Clause

The Outer Object is syntactically defined as an NP which is unmarked for case and which cannot be coreferenced by the Undergoer marker on the verb (cf. VI.D.). A relator-related phrase, the Resemblance Phrase, may manifest the Outer Object function. It is described in Table 80.

Table 80: Resemblance Phrase

Functions	+ Related Head	+ Relator
exponents	NP	kañjë 'like'
	GEN. Relative Clause	kindë 'like'
	Nominal clause	hafit 'similar measurement'

Resemblance phrases with a relator are illustrated in an Equative Clause and in a 2-place clause in example 6.

6(a).

		RES. Phrase		
ɪndar	yënr	tukia	hafit	korhwër
this	child	myself	similar	he.is.seated
<i>'This child is similar to me (e.g., in size).'</i>				

(b).

			RES. Phrase	
			GEN.REL.Cl.	Relator
yënr	nërwit	gurwër	yifemr gurwa	kanjë
child	slit.	beats	father beats	like
	drum			
<i>'The child beats the slit drum like (his) father beats.'</i>				

The Resemblance phrase (RES P) is structurally similar to case-marked relator phrases (cf. VI.C.). The structure is most like a Referent NP (cf. Table 90) except that the relator of the Resemblance Phrase is optional. The Resemblance phrase manifests the Outer Object function in an Equative clause, however. Therefore the RES P is paradigmatically related to non-case-marked NP's in the Outer Object slot rather than being related to case-marked relator phrases in the periphery of the clause. The case-like relator of the RES P is optional; to that extent the RES P contrasts structurally with other relator-related (case-marked) phrases. When the relator is not manifested, the RES P assumes the form of any other Outer Object (unmarked for case). Whether the relator is manifested or not, the

Resemblance Phrase functionally operates as an Outer Object, i.e., the object to which the subject is partially or totally equated.

Without a relator, the Resemblance Phrase functions as a metaphor; with the relator the RES P functions as a simile. The metaphorical use of the Resemblance Phrase is not often confused with a simple noun phrase, although the two are structurally the same. With metaphors, the partial grounds of comparison between the Subject and the related Head of the RES P is understood by a convention of the society. Example 7 illustrates a metaphorical RES P.

- 7.
- | | | | | |
|-----|-----------------------------|---------|----------------|--|
| | | RES P | | |
| ɪnd | yimar | taprfat | təhwër | |
| DEM | man | wren | he.is.standing | |
| | <i>'The man is a wren.'</i> | | | |

Sentence 7 is interpreted as follows: The wren typically flits around a lot from branch to branch; a man who is equated with a wren is one who is always changing his mind, having said one thing he will do another. Sentence 8, the functional equivalent of a simile, manifests the full form of the Resemblance Phrase.

- 8.
- | | | | | |
|-----|----------------------------------|---------|-------|----------------|
| | | RES P | | |
| ɪnd | yimar | taprfat | kañjë | təhwër |
| DEM | man | wren | like | he.is.standing |
| | <i>'The man is like a wren.'</i> | | | |

c. 1/2-PLACE CLAUSE

The 1/2-Place Clause structurally contrasts with other clause types by its feature of an optional Inner Object¹ function slot (cf. Table 77). Subtypes of the 1/2-Place Clause (as well as other types) will be discussed in Section VII.C.2, where possible exponents of the predicate and object

¹ See Section VI.D. for a discussion of the Inner Object.

slots will be discussed on a semantic basis.

Table 81: 1/2-Place Clause

Functions	(Periphery)	+ Subject	+ Inner Obj.	+ Predicate
exponents	Acessive NP Path NP Reference NP S.Setting NP G.Setting NP Allative NP Instrument NP Resemblance P Purpose Cl.	(V.Table 78)	NP PNP	VP

The 1/2-Place Clause is illustrated in example 9.

9(a).

Subj.

yima -r noh - mē - r
 person-3SM die-R.PST -3SM
 'A man died.'

(b).

In. Obj. U

yima - r nan - ho kuñ - t noh - mē - r - t
 person-3SM 1S - GEN house-3SF die-R.PST-3SM-3SF
 'A man died (in) my house.'

(c).

S. Setting NP

nan - ho kuñ - t - n yima - r noh - mē - r
 1S - GEN house-3SF-S.SET person-3SM die-R.PST-3SM
 'A man died in my house.'

(d).

U

yifuNg-t - n yima - r nan-ho kuñ - t noh - mē - r - t
 night-3SF-S.SET person-3SM 1S-GEN house-3SF die-R.PST-3SM-3SF
 'A man died (in) my house in the night.'

d. 2-PLACE CLAUSE

The 2-place Clause structurally contrasts with other

e. 2/3-place Clause

The 2/3-place Clause structurally contrasts with other clause types by obligatorily exhibiting an Inner Object and optionally exhibiting an Outer Object.

Table 83: 2/3-place Clause

Functions	(Periphery)	+ Subject	+ Inner Object	+ Outer Object	+ Pred-icate
exponents	(V.Table 81)	(V.Table 78)	(V.Table 80)	NP PNP	VP

The 2/3-place Clause is illustrated in example 11 below.

11(a).
 Subj. In. Obj. U
 yima - r yën - t gëbrërna - më - r - t
 person-3SM child-3SF rub - R.PST -3SM-3SF
 'A man rubbed a girl.'

(b). U Out. Obj.
 yimar yënt gëbrërnämërt hëhrampam
 man girl he.rubbed.her medicine
 'A man rubbed a girl (with) medicine.'

(c). INS NP
 yimar yënt gëbrërnämërt hëhrampa - e
 man girl he.rubbed.her medicine -INS
 'A man rubbed a girl with medicine.'

(d). INS NP Out. Obj.
 rmënthä-e yimar yënt gëbrërnämërt hëhrampam
 cloth-INS man girl he.rubbed.her medicine
 'A man rubbed medicine (on) a girl with a cloth.'

f. 3-place-Locative Clause

The 3-place Locative Clause structurally contrasts with other clause types by obligatorily manifesting either a locative NP or an Outer Object.

Table 84: 3-place-Locative Clause

Functions	(Periph)	$\left[\begin{smallmatrix} + \\ - \end{smallmatrix} \right]$ Locative	+ Subject	+ Inner Obj.	$\left[\begin{smallmatrix} - \\ + \end{smallmatrix} \right]$ Outer Obj.	+ Pred.
exponents	(v. Tab. 81)	S.SET NP	(v. Tab. 78)	(v. Tab. 80)	(v. Tab. 80)	VP

The 3-place-Locative Clause is illustrated in example 12 below.

12(a)

S.SET NP	Subj.	In.Obj.	U
jing - t - n	yima - r	yira-m	hembre -më - r - m
insect-3SF-S.SET	person-3SM	fish-3PL	put.into-R.PST-3SM-3PL
.basket			
<i>'A man put fish into an insect basket.'</i>			

(b).

In. Obj.	Out. Obj.	U
yima - r	jiNg - t	yira - m
person-3SM	insect-3SF	fish-3PL
.basket	put.into-R.PST-3SM-3SF	
<i>'A man filled an insect basket (with) fish.'</i>		

(c).

S.SET NP	U
kuñ - t - n	yimar jiNgt hëmbremërt yiram
house-3SF-S.SET	man insect he.filled.it fish
.basket	.basket
<i>'A man filled an insect basket (with) fish in a house.'</i>	

The peripheral Specific Setting Phrase in example 12(a) is manifested as Inner Object in example (b), and the Inner Object of example (a) is manifested as Outer Object in example (b).

g. 3-place Clause

The 3-place Clause structurally contrasts with other clause types by an obligatory Outer Object slot.

Table 85: 3-Place Clause

Functions	(Periphery) +Subj. +Inner +Outer + Predicate Obj. Obj.
exponents	(as in Table 84) VP

The 3-place Clause is illustrated in example 13 below.

- 13.
- | | | | | |
|-----------|------------|-----------|--------------------|-----------------|
| Subj. | In. Obj. | Out. Obj. | U | S.SET NP |
| met - t | yima - r | nua - m | hay - mē - t - r | kuñ - t - n |
| woman-3SF | person-3SM | food-3PL | give-R.PST-3SF-3SM | house-3SF-S.SET |
- 'A woman gave a man food in a house.'*

Before turning to the marked features of declaration and polarity, we will now make certain generalizations about the optionality and permutability of the constituents of the clause types discussed thus far. The 2-place Clause is perhaps the most interesting to consider from the point of view of word order typology.

Optionality of Clause Level Constituents

Approximately 50% of Two-place Clauses in running texts exhibit only two function slots (Subject or Object and Predicate); approximately 30% exhibit three slots. The function of verbal Person markers which often makes the manifestation of subjects and objects redundant has been discussed

earlier (cf. p. 280). In Two-place Clauses, an Object NP occurs approximately seven times as often as does a Subject NP.

Permutability of Clause-Level Constituents

The basic word order of a Two-place Clause is SOV; however, it is flexible. The object may follow the predicate with or without the presence of the subject. The object may precede the subject for pragmatic reasons.¹ Peripheral slots seem to be able to intervene anywhere within the clause.

¹ The pragmatic reasons referred to here have to do with processing the information of the clause. Very little work was done in the research for this thesis on identifying the factors which control word order in the clause. It has been observed, however, that in sentences containing all new information, the object may precede the subject if it contains considerably more information than the subject. The sentences in example 14 illustrate this.

14(a).
 Subj. In.Obj.
 Mariwanr mett' fakmërt
 Mariwan woman he.got.her
 'Mariwan got a woman.' (= 'Mariwan took a wife.')

(b).
 In. Obj. Subj.
 nanho bro mëndaremt Mariwanr fakmërt
 my big sister Mariwan he.got.her
 'Mariwan got my big sister.'

This phenomenon is related to factors of referentiality discussed in Section VII.C.3. In that section Undergoer NP's are seen to precede Actor NP's due to factors of referentiality. According to the analysis there, a preposed object is a Referentially Prominent NP, being primarily a reflex of natural topicality.

Features of discourse topicality may be relevant for Alambak word order as well. Example 14(b) did not occur in a text, but it is likely to be the topic of the discourse which the speaker chooses to express in the more expanded NP if there is a significant difference between NP's in a given clause. This suggestion was supported in elicitation work with Jude Mengumari of Amongabi. When presented with two NP's and a predicate, he was asked to form a discourse-initial sentence. He ordered the NP's as in example 15(a).

15(a)
 Subj. Out. Obj.
 Katitho habhi mëndaremr Nanho mëndaremt fakmër
 Kathy's small brother my sister he.got
 'Kathy's little brother got my sister.'

2. DECLARATION PARAMETER

The three features of the declaration parameter are as follows: Unmarked Declarative, Yes/No Interrogative, and Content Interrogative. All Yes/No Interrogative Clauses are syntactically unmarked for the interrogative feature. They are phonologically marked as described in Section II.F.

Table 86: Distinctive Features
of the Declaration Parameter

	Declarative	Yes/No Interr.	Content Interrogative	
Transitivity Type	(unmarked)	yes/no inton- ation (cf. § II.F)	<u>Subject ... Predicate</u>	
			$\left[\begin{array}{c} \text{QNP} \\ \left\{ \begin{array}{c} \text{NP} \\ \text{PNP} \end{array} \right\} \\ \left\{ \begin{array}{c} \text{NP} \\ \emptyset \end{array} \right\} \end{array} \right]$	$\left[\begin{array}{c} \left\{ \begin{array}{c} \text{COP VP} \\ \text{EXIST BP} \end{array} \right\} \\ \text{Copulative} \\ \text{Interrogative} \end{array} \right]$
Finite Clauses (Equative, 1/2-place, etc.)			<u>...</u> QNP	<u>Predicate</u> VP [+ PRSUP]

Table 86 indicates that in a Copulative Content Interrogative Clause, either the subject function is manifested by a question

1 (Cont'd)

When he was asked to order the same constituents as if the object were the main point of discussion, he reordered the clause as in example (b).

15(b) In. Obj. Subj.

Nanho mëndaremt Katitho habhir fakmërt

my sister Kathy's small.one he.got.her

The topic of the discourse has been moved to the front of the clause in example (b) and the speaker automatically reduced the size of the non-topical Actor NP.

The research which was conducted was not extensive enough to formulate any firm conclusions concerning word order. Indications are, however, that word order in the clause is not arbitrary but sensitive to discourse and other pragmatic factors of hearer-based considerations on the part of the speaker.

noun phrase QNP¹, or the copulative construction of the predicate slot is based on an interrogative form. For Finite Content Interrogative Clauses, 1) any one of the non-predicate functions must be manifested by a Question NP and 2) the VP must exhibit the Presupposition mood if a form of the verb occurs which can also host the Presupposition marker. Several examples will be given to illustrate the distinctiveness of the Content Interrogative clause.

a. COPULATIVE CONTENT INTERROGATIVE CLAUSE

In the Copulative Content Interrogative Clause an interrogative element must manifest either the subject or the predicate function.

16(a). fitëh yimam broem
 which men they.are.big
 '*Which men are big?*'

(b). (yimam) frëhem
 (men) who.are.they
 '*Who are {the men} ?*'
 {they }

b. FINITE CONTENT INTERROGATIVE CLAUSES

Table 86 indicates that finite Content Interrogative Clauses exhibit at least one non-predicate function slot which is manifested by A Question NP. A QNP, however, cannot manifest the Inner Object function, i.e., it cannot be coreferenced by the second Person marker on the verb. The predicate is manifested by a verb which must select the Presupposition marker if possible; that is, if the verb exhibits a form which can co-occur with the Presupposition marker, then the Presupposition marker must be manifested. Thus Imperfective, present tense, or future tense forms of the

¹ A Question Noun phrase is defined as a noun phrase with an Interrogative root manifesting one of the functions (e.g., Inner Modifier or Head).

verb must host the Presupposition marker, but Perfective past tense forms do not.

Permutability of Constituents of Content Interrogative Clauses

The basic order of the constituents of the clause is the same for interrogative clauses as it is for declarative clauses. The function slot which is manifested by a Question NP does not shift to the front or any other position in the clause.

Example 17 illustrates several forms of the Content Interrogative Clause.

- 17(a). Subj.
fröh - r kaunsel tēh - w - a - r?
who-3SM counsellor standing-IMPF-PRSUP-3SM
'Who is the counsellor?'
- (b). Al NP
fitēhko yi - mē - r
where.to go-R.PST -3SM
'Where did he go?'
- (c). LOC NP
fitēmbha nua - m ton - w - a - t - m
which.place food-3PL fry-IMPF-PRSUP-3SF-3PL
'Where is she frying the food?'
- (d). Subj.
fröh-m nua-m ton - w - a - m - m
who-3PL food fry-IMPF-PRSUP-3PL-3PL
'Who is frying the food.'
- (e). Out. Obj.
met - m tamēh - m yayk - w - a - m
woman-3PL what-3PL get-IMPF-PRSUP-3PL
'What are the women getting?'

Note that in example 17(e) the QNP manifests an Outer Object NP even though it questions a semantic role (viz., Patient) which is encoded by an Inner Object in declarative clauses.

3. POLARITY PARAMETER

There are two features of the polarity parameter, affirmative and negative. Affirmative is unmarked, but negative is marked in different ways depending on the transitivity type of the clause and the mode of the verb which manifests the predicate. The reflexes of the negative parameter of the clause are given in Table 87.

The distinctive features of negative clauses include specifications of the exponents of the predicates and additional function slots which are not a part of affirmative clauses. A negative function slot is included in declarative clauses and in Contrafactual Hortative Clauses. A rhetorical predicate slot is included in Hortative clauses. Exponents are more restricted in the Contrafactual Hortative compared to their affirmative counterparts. Finally, negative polarity specifies that finite declarative predicates and Contrafactual Hortative predicates must be marked for irrealis and, where allowable, presupposition.

Permutability of the Negative Function Slot

A general statement of permutability can be made for most negative clauses. In clauses with a negative function slot, the negative slot may permute to any pre-predicate position. It is not clear what the semantic effect (e.g., changes in scope) of alternate ordering is, if indeed there is any difference at all. When both the rhetorical predicate slot and the negative slot are manifested, then the negative slot must follow the rhetorical predicate and immediately precede the predicate.

Negative clause types are illustrated in examples 18-21 below.

a. Negative Copulative Clause

18. yimar nhai broer
 man no he.is.big
 'The man is not big.'

b. Negative Finite Declarative Clauses

19(a).

NEG

Kaunsel fiñji tēh - r - mē - w - a - r
 Counsellor NEG standing-IRR-R.PST-IMPF-PRSUP-3SM
 'He was not being the counsellor.'

(b).

NEG

tafitē rēr noh - r - fē - r
 NEG he die-IRR -I.PST-3SM
 'He has not yet died.'

(c).

NEG

yimar nuam fiñji yak - kah - r - m
 man food NEG get-PR.IRR-3SM-3PL
 'A man is not getting food.'

(d).

NEG

afē hi - rhwat - r - m nuam
 NEG give-FUT.IRR-3SM-3PL food
 'He will not give them food.'

c. Negative Hortative Clauses20(a). Rhet. Pred.

mi - rah-r Kaunsel a - tēh - a
 say-FUT-3SM counsellor HORT-standing-1S
 'He will say (but should not) "I should be counsellor"'.
 (= 'He should not be the counsellor.')

(b).

Rhet. Pred.

yēnr mi - rah-r a - i - a
 boy say-FUT-3SM HORT-go-1S
 'The boy will say (but should not) "I should go."
 (= 'The boy should not go.')

20(c). nuam a - yay - wah - n - m
 food HORT-eat-NEG- - 2S-3PL
 .HORT
 .PR

'You should not eat food.' (To a person who is eating or about to eat)

(d).

<u>Rhet. Pred.</u>	<u>In.Obj.</u>	<u>Out.Obj.</u>
yënr mi - rah-r	jĩngt a - hëmbre - an - t	yiram
boy say-FUT-3SM	insect HORT-put.into-1S-3SF	fish
	.basket	

'The boy will say (but should not) "I should fill an insect basket (with) fish.'

(= *'The boy should not fill an insect basket (with) fish.'*)

(e). mett yimar nuam a - hi - wah - t - r
 woman man food HORT-give-NEG-3SF-3SM
 .HORT
 .PR

'The woman should not give a man food.'

Rhetorical Predicate Function of Negative Hortative Clauses

The Rhetorical Predicate encodes a negative hortative expression with a declarative future surface form of the predicate. It is not a literary device inasmuch as this is the only way to express a negative hortative in future time. The term 'rhetorical' is employed here, since the surface form is ambiguous and is interpreted in this context in a way which is not indicated by the morphology of the verbal exponent.

d. Negative Contrafactual Hortative Clauses

21(a).

<u>Rhet. Pred.</u>	<u>NEG</u>
yimar may - r - më - r	afë tëh - rhwat - a
man say-IRR-R.PST-3SM	counsellor NEG standing-FUT - 1S
	.IRR

'The man (should) have said, "I will not be the counsellor."'

(= *'The man (should) not have been the counsellor.'*)

21(b).

	Rhet. Pred.	NEG	
yënm	may - r - rë - m	afë	hoi - rhwat - nëm
boys	say-IRR-N.PST-3PL	NEG	sleep- FUT - 1PL .IRR

'The boys (should) have said, "We will not sleep."'
 (= *'The boys should not have slept.'*)

(c).

	Rhet. Pred.	
yimar	yënt may - r - fë - r	kahpam
man	girl say-IRR-I.PST-3SM	oil
	NEG	
afë	gëbrërna - rhwat - an - t	
NEG	rub - FUT - 1S - 3SF .IRR	

'The man (should) have said, "I will not rub the girl (with) oil."'
 (= *'The man should not have rubbed the girl (with) oil.'*)

Rhetorical Predicate Function of Negative Contrafactual Hortative Clauses

The Rhetorical Predicate encodes a Negative Contrafactual Hortative with an irrealis form of the verb. The semantic component of obligation is clearly present even though the verb is not marked with the Hortative prefix. (Refer to Section V. B.1.b for examples of hortative irrealis verb forms encoding affirmative contrafactual hortative expressions).

This concludes our description of transitivity, declaration, and polarity parameters of independent clauses. One more example is given below exhibiting both marked features of declaration (viz., Content Interrogative) and polarity (viz., negative).

22.	yënr	tamëhm	a - yay - wah - r
	child	what	HORT-eat- IRR - 3SM .HORT .PR

'What should the child not eat?'

4. VOICE

The verbal exponent of finite clauses has been discussed

in Chapter V. In the typical form, the Actor pronominal marker is obligatorily present on the verb and the Undergoer pronominal marker may or may not occur apparently according to various factors such as redundancy and referential patterns (cf. footnote on p. 289). There is a limited phenomenon in Alamblak whereby the Actor of a multi-place clause and its verbal pronominal suffix are unspecified, leaving a Patient Noun Phrase which is coreferenced by the only pronominal marker in the verb. For instance, compare examples 23(a) and (b).

23(a). yima - f miy - m pok - rah - f - m
 man - 3D tree-3PL cut - FUT -3D-3PL
 '*(Two) men will cut (the) trees.*'

(b). miy - m pok - rah - m
 tree-3PL cut - FUT -3PL
 '*The trees will (be) cut.*'

The Alamblak verb is analysed as 'voice-neutral' (Lyons 1968:378) inasmuch as a transitive verb may occur with either Agent or Patient 'subjects'.¹ Either noun phrase may occur, furthermore, with the same form of the verb. Finally, when a Patient subject occurs, the clause must remain agentless unless the Patient and Agent are coreferential, e.g.,

24. yima - m pok - rah - m
 man-3PL cut - FUT-3PL
 '*The men will cut (themselves).*'

Example 24 need not be interpreted reflexively if another subject or object is understood in the linguistic or extra-linguistic context. See Section VII.C.2.b for a detailed discussion of reflexivity.

¹ In Bruce (1974) there is an early discussion of voice in Alamblak. The data and analysis have not been altered here. The conclusion as to the best characterization has changed, however, from 'pseudo-passive' in that article to 'voice-neutral' here.

C. PERIPHERAL NOUN PHRASES (CASE MARKING)

The noun phrases discussed here may be considered to be those bearing non-nuclear grammatical relations to the verb in the clause.¹ It is easier to associate these NP's with specific semantic roles than it is with nuclear NP's (cf. Section VII.B., Role Structure).

An overview of relations encoded by the peripheral 'relator-related' phrases is given in Table 88.

Several of the 'case' enclitics may encode more than one meaning. Specific rules for encoding or interpreting the appropriate meaning are discussed with each phrase. For example, the Adessive NP plus a motion verb encodes 'to' as its meaning; with a non-motion verb, the Adessive NP encodes 'at' as its meaning.

The peripheral NP's structurally group into three types depending on the presence or absence of terminator slots and/or their ordering relative to other function slots. Tables 89-91 present an overview of basic structural contrasts between peripheral NP's. Exponents of the Terminator function are Person-Number-Gender markers (cf. Table 36, p. 151). The Emphatic and Elevational markers are explicated in Sections IV.C.1.b and IV.C.1.c.

¹ Peripheral NP's basically correspond to non-terms in the theory of Relational Grammar ('impure' or 'oblique' NP's). According to Johnson (1977:153), they are NP's which "have independent semantic content". The constituent of the clause periphery which is not discussed here is the Purpose Clause. The Purpose Clause will be discussed with other embedded clauses in Chapter IX.

Table 88: The Semantics of Peripheral Noun Phrases

Relator Markers	Semantic Specifications												
	At	To	Toward	From	In Relat- ion To	In	On	Along	By	Means Of	Efficient Cause	Comitative	Animate Head
Adessive <u>-kor</u>	+	+	-	-	-	-	-	-	-	-	-	-	-
Path <u>-oha</u>	-	-	-	-	-	-	-	+	-	-	-	-	+
Referent <u>-pnë</u>	+	+	?	+	+	-	-	-	-	-	+	+	+
Specific Setting <u>-n</u>	+	-	-	-	-	+	+	-	-	-	-	-	+
General Setting <u>-nanë</u>	-	-	-	-	-	+	+	-	-	-	-	-	+
Allative <u>-ko</u>	-	-	+	-	-	-	-	-	-	-	-	-	-
Instrument <u>-e</u>	-	-	-	-	-	-	-	-	+	-	-	-	-

Table 89: Peripheral NP's₁

	Related Axis	Relator	Terminator	Emphatic marker	Elevational marker
Adessive NP	+	+	<u>+</u>	<u>+</u>	<u>+</u>
Path NP	+	+	+	<u>+</u>	<u>+</u>

Table 90: Peripheral NP's₂

	Related Axis	Terminator	Relator	Elevational marker
Referent NP	+	+	+	<u>+</u>
Specific Setting NP	+	+/-/ <u>+</u> ¹	+	<u>+</u>

Table 91: Peripheral NP's₃

	Related Axis	Relator
General Setting NP ²	+	+
Allative NP	+	+
Instrument NP	+	+

¹This notation means that the terminator slot must not be manifested under certain circumstances but must be manifested or is optional under others (cf. section C.4, Specific Setting NP).

²The General Setting NP does rarely exhibit a terminal slot following the Relator (cf. section C.5, General Setting NP).

1. Adessive NP

The Adessive NP contrasts with other peripheral NP's because of the exponent of the relator function and the optionality of the Terminator. Furthermore, the Adessive NP manifests a Base which functions as a distributional unit in other NP's (e.g., Specific Setting NP).

Table 92: Adessive NP and NP Base

Func	+ Nucleus	+ Terminator	+ Emphatic	+ Elevational								
exp	<u>AD NP Base:</u>	PNG markers (v. Table 36)	<u>-n</u> 'emphatic'	Elevational markers (v. Table 37)								
	<table border="1"> <tr> <td>Func</td> <td>+Related Head</td> <td>+Relator</td> <td></td> </tr> <tr> <td>exp</td> <td>NP Base LOC Complex base</td> <td><u>-kor</u></td> <td></td> </tr> </table>				Func	+Related Head	+Relator		exp	NP Base LOC Complex base	<u>-kor</u>	
Func	+Related Head	+Relator										
exp	NP Base LOC Complex base	<u>-kor</u>										

Notes: The Adessive NP encodes two semantic roles, Adessive and Allative. The particular semantic interpretation of an NP is predictable by the class of the co-occurring verb in the clause. Adessive co-occurs with non-motion verbs, and Allative co-occurs with motion verbs.

a. ADESSIVE ROLE

Adessive, defined as the locale at which a state or event is centered, is illustrated by example 25.

25(a).

	<u>Adessive NP</u>			
metm	yimaroh	moNg	- kor	grhaywm
women	men's	back	- AD	they.dance
	'Women dance at the back of the men.'			
	(= 'Women dance behind the men.')			

25 (b) .

fiñji tëhrmëm	AD NP
NEG they.did.not.stand	bus - kor - t
	forest-AD-3SF
	<i>'They did not live in the forest.'</i>

b. ALLATIVE ROLE

Allative is defined as the locale toward which the predication is directed or at which the predication is terminated. The Adessive NP with the allative interpretation relates only non-human locales to the predicate.

26.

womr	Adessive NP
the.other/another	briha - kor fakrmemër
	outside-AD they.ran.in.fear
	<i>'The other/another ran away in fear outside.'</i>

Exponents of the AD NP BaseLocative Complex Base

The Locative Complex Base was referred to in section III.C.8. It is composed of a Head noun plus a Locative Position as displayed in Table 93.

Table 93: Locative Complex Base

Functions	+ Head	+ Position
exponents	noun root	Positional root (v. § III.C.8.b)

For example,

27(a). kuñ - kimb
 house-beside

27(b). doh - dañ
 canoe-along.the.middle

Example 28 illustrates an Adessive NP which includes a Locative Complex Base,

28. AD NP
 kuñ -kimb - kor tëhwër
 house-beside-AD he.is.standing
 '*He is standing beside the house.*'

2. PATH NP

The Path NP construction is similar to the Adessive in that the Relator suffix precedes any terminations. The main difference between the two, apart from different exponents of the Relator suffix, is that the Person-Number-Gender marker is obligatory in the Path NP while only optional in the Adessive NP.

Table 94: Path NP and NP Base

Func	+ Nucleus	+ Terminator	+ Emphatic	+ Elevational						
exp		PNG markers (v. Table 36)	-n 'emphatic'	Elevational markers (v. Table 37)						
	<u>Path NP Base:</u>									
	<table border="1"> <thead> <tr> <th>Func</th> <th>+Related Head</th> <th>+Relator</th> </tr> </thead> <tbody> <tr> <td>exp</td> <td>NP Base LOC Complex Base</td> <td>-oha</td> </tr> </tbody> </table>				Func	+Related Head	+Relator	exp	NP Base LOC Complex Base	-oha
Func	+Related Head	+Relator								
exp	NP Base LOC Complex Base	-oha								

notes: The term 'path' is taken from Longacre (1976:34):
 "The locale or locales transversed in motion etc.
 predications ..." The Path NP base is potentially
 distributed in the Specific Setting NP manifesting the
 Related Head function; that distribution is necessary
 when co-occurring with non-motion predications.

29 (a) . Path NP
 yhoty - oha - t kawwr
 road - PATH-3SF he.is.walking
 'He is walking along the road.'

(b) . Path NP
 kuñ - kimb - oha - t kawwr
 house-beside-PATH-3SF he.is.walking
 'He is walking along beside the house.'

3. REFERENT NP

The Referent and Specific Setting NP's differ from the Adessive and Path NP's in relative ordering of constituents.

Table 95: Referent NP

Func	+ Nucleus	+ Terminator	+ Relator	+ Elevational
exp	NP Base	PNG markers	<u>-pnë</u>	Elevational markers
	AD NP Base	(v.Table 36)		(v.Table 37)

notes: The Referent case marker is a multi-factor morpheme encoding several semantic roles, viz., Adessive, Allative, and Elative. The Referent marker also serves to conjoin NP's in the Comitative NP (cf. VII.C.3); it marks the Cause (i.e., Reason) in an Efficient Cause sense (cf. Section VIII.B.); and it marks an NP as a Point-of-Reference for a positional orientation. These notions will be expounded with further definition and examples below.

a. ADESSIVE ROLE

30. ka - wa - kërthëbi - më - t tembt
 CAUS-up-twist.and.turn-R.PST-3SF shotgun

Referent NP

nuNgwar tu - hambha - r - pnë
 bird E/R.PRON-place -3SM- REF
 'The shotgun fatally wounded the bird up where it was.'

b. ALLATIVE ROLE

31. Referent NP
 yën - r - pnë hīnamëanr nungwar
 child-3SM-REF I.brought.it bird
'I brought a bird to the child.'

c. ELATIVE ROLE

Elative is defined as the source or locale away from which a predication is directed.

32. Referent NP
 ïnd - ëmbha - r - pnë mithonalgetanëm
 DEM-place - 3SM-REF we.floated.down.all.the.way
'From there (using one tank of petrol) we floated down all the way.'

33. Ref NP
 nhai wom - m - pnë wikna - r - më - an - r
 NEG other-3PL-REF buy - IRR - R.PST-1S -SM
'I did not buy it from anyone.'

d. EFFICIENT CAUSE ROLE

Certain causative expressions are formed by marking the Causer NP of the clause with the Referent marker. The efficient cause in these constructions indicates the inanimate NP which is the indirect cause of or reason for the predication.

34. Ref NP
 mar - r - pnë hipwënë
 sun-3SM- REF we.are.perspiring
'Because of the sun we are perspiring.'

A precipitating event can be the cause of a predication as well, e.g.

35. $\overbrace{\text{ind na - t - pnë}}^{\text{Ref NP}}$ fakrmemët
 DEM do -3SF-REF she.ran.away.in.fear
'Because of that happening she ran away in fear.'

One of the interrogative structures translated 'why' utilizes a Referent marker with an Interrogative root form. The superficial gloss 'why' may be analysed as something like 'with reference to what cause' (cf. the discussion of Interrogatives in Section III.C.5).

36. $\overbrace{\text{na tamë - m - pnë}}^{\text{Ref NP}}$ nohwaa
 I what-3PL - REF am.I.dying
'What am I dying from?'

e. COMITATIVE FUNCTION

The Referent marker -pnë functioning as a Comitative marker relates one noun phrase to another such that the NP's are equivalent in semantic role function but not equivalent in perspective. Detailed semantic analysis of the Comitative construction is attempted in Section VII.C.3. The Comitative Ref NP is clearly not an autonomous peripheral phrase. It is closely related syntagmatically as well as semantically to its associated NP. Thus the Comitative can be analysed as a type of conjunction and has been described in this way in Section VII.C.3. There are structural differences between the Comitative Ref NP and Ref NP's with other functions in the clause. For purposes of convenient comparison, the Comitative NP is described here in Table 96.

Table 96: Comitative NP

Func	+ Related Nucleus	+ Terminator	$\begin{bmatrix} \pm \\ + \end{bmatrix}$	Relator ₁	$\begin{bmatrix} + \\ \pm \end{bmatrix}$	Relator ₂	\pm Elevational
exp	NP Base	PNG markers (v. Table 36)		<u>-pnë</u> 'Comitative'		<u>-rpat</u> 'together'	Elevational markers (v. Table 37)

37(a).

	Com NP	
yënr	yima - r - pnë	yi - më - f
boy	person-3SM-COM	go-R.PST-3D
<i>'A boy went with the man.'</i>		

(b).

	Com NP	
yënr	yima - r - rpat	yi - më - f
boy	person-3SM-together	go-R.PST-3D
<i>'A boy went with the man.'</i>		

(c).

	Com NP	
yënr	yima - r - pnë - rpat	yi - më - f
boy	person-3SM-COM-together	go-R.PST-3D
<i>'The boy went with a man.'</i>		

f. POINT OF REFERENCE (P of R) ROLE

Point-of-Reference characterizes the orientation of a spatial position not involving contact, or it limits the predication to a particular time or explanation, with implications of a possible cause-effect relationship between the referenced time and the predicate.

The Referent NP in example 38 delineates the time of the predicate. Example 38(b) references the time of the clause in a flash-back section of discourse.

38(a)

	Ref NP	
ɨnd	yha - r - pnë	dbëhna - më - w - m
DEM	day -3SM-REF	sick-R.PST- IMPF-3PL
<i>'At that time they were continually sick.'</i>		

(b)

	Ref NP	
ɨnd - ëmbha	hir - ha - muh - nef - t - pnë	
DEM-place	float-CAUS-go.up-NOM -3SF- REF	
<i>'there with reference to going up (river).'</i>		
<i>(= 'there, on the way upriver').</i>		

When the REF marker characterizes the orientation of a spatial position, it relates a Head noun root to a Positional

(cf. Locative roots in Section III.C.8). In this function the Referent marker is not relating a constituent to the predicate and thus the Ref NP relator construction is best described as an embedded constituent of a Locative Phrase. This usage is illustrated in example 39 below.

39(a).

Loc. P
Ref. NP
rët - pnë brbë yi-dohra
her - REF near go-NONPOSSD
<i>'Without going near her.'</i>

(b).

Loc. P
Ref. NP
tik - t - pnë yurak wahegirtwant
table-3SF-REF above you.hang.it.up
<i>'Hang it above (with reference to) the table.'</i>

4. SPECIFIC SETTING NP

The Specific Setting NP contrasts with the Referent NP in terms of its exponents of the related-nucleus function and the pattern of manifestation of the Terminator slot.

Table 97: Specific Setting NP

Func	+ Related Nucleus	+/-/+ Terminator	+ Relator	+ Elevational
exp	NP Base Loc. roots Temp. roots Adessive NP base (V.Table 92) Path NP base (V.Table 94)	PNG marker (v.Table 36)	<u>-n</u>	Elevational markers (v.Table 37)

notes: The +/-/+ notation for the terminator slot is to be interpreted as indicating that the terminator function slot must occur with certain exponents of the related Head, cannot occur with certain others, and is optional with

d. TEMPORAL REFERENCE ROLE

Temporal Reference is defined as the period of time within which a predication takes place.

43.

	<u>S.Setting NP</u>
nuam	watonhitwana dbha - n
food	you.fry.for.me morning-S.SET
	<i>'Fry food for me in the morning.'</i>

5. GENERAL SETTING NP

The General Setting NP contrasts with the Specific Setting NP, apart from the different exponent of the relator slot, in that the Terminator in the G. Setting NP is highly restricted, whereas the S.Setting NP almost always manifests a Terminator.

Table 98: General Setting NP

Func	+ Related Nucleus	+ Relator	+/- Terminator
exp	locative roots temporal roots terminated adverbs	[<u>-nanë</u>] [<u>-nanëh</u>]	[---] [PNG markers (V.Table 36)]

The semantic contrast between the Specific Setting NP and the General Setting NP does not correlate with the difference in their labels, which at best reflects a structural difference (the General Setting NP typically does not identify the person, number, and gender of the related Head, whereas the Specific Setting NP typically does). Actually, definite, indefinite, specific, and generic NP's may occur in either setting phrase.

Semantically, the General Setting NP is in some ways more restricted in use than the Specific Setting NP, but it is more versatile in others. The General Setting NP encodes Interior Locative, Surface Locative, Temporal Reference, and Manner roles.

a. SURFACE LOCATIVE ROLE

44. G. Set NP
 yimënëm yurak-nanë kmiñsëfmn
 we.went up - G.SET on.mountains
 'We went up on the mountains.'

b. TEMPORAL REFERENCE ROLE

45. G.Setting NP
 dbha - nanë mett tonhemëtr nuam
 morning-G.SET woman she.fried.for.him sago
 'In the morning the woman fried sago for him.'

c. MANNER ROLE

Manner role is defined as the manner in which the predication occurs.

46. G.Setting
 bumbri - t - nanë pailatr fakrekutabmërt
 hurry - 3SF -G.SET pilot he.switched.it
 'The pilot switched over in a hurry.'

6. ALLATIVE NP

The Allative NP and the Instrument NP contrast with other relator phrases in their lack of a terminator function slot.

Table 99: Allative NP

Functions	+ Related Nucleus	+ Relator
exponents	NP Base [-animate] Locative root	<u>-ko</u>

notes: The Allative NP encodes the Allative role.

47(a) Allative NP
 nayayrahnëm kmi - ko
 we.will.come village-AL
 'We will come to the village.'

(b). Allative NP
 rinë mku + ko wutëntëmbrat
 we.went piece - AL to.knock.down.breadfruit
 'We (two) went to the (other) side to knock down
 breadfruit.'

7. INSTRUMENT NP

The Instrument NP indicates the manner or means whereby the predicate is carried out.

Table 100: Instrument NP

Functions	+ Related Nucleus	+ Relator
exponents	NP Base [-animate]	<u>-e</u>

The Instrument NP encodes the agent-focal Direct Instrument and Indirect Instrument roles, and the more patient-focal Manner Instrument role. It is unlikely that ambiguities involving the three interpretations of instrument would arise very often, thus there is little pressure to differentiate them syntactically. There is, nonetheless, the potential for ambiguity which indicates that three distinct semantic roles are operating (cf. examples 8 and 9 in Chapter VII).

a. DIRECT INSTRUMENT ROLE

The Direct Instrument is defined as the role of the inanimate entity (including body parts) which is used directly in the action of the predicate by an agent whereby the predication is realized.

Example 48 illustrates the direct manipulation of the instrument by the agent.

48. Ins. NP
 yuf - toa - e gëbrënamëanr
 yuf.tree-leaf-INS I.rubbed.him
 'I rubbed him with a Yuf leaf.'

b. INDIRECT INSTRUMENT

The Indirect Instrument is defined as the role of the inanimate entity which is used indirectly (involving one or more unstated events) by an agent whereby the predication is realized.

Example 49 illustrates an indirectly manipulated instrument.

49. Ins NP
 maruham nëm kaykwënëm ind yifën - e
 money we we.get DEM carving-INS
 'We get money by means of the carvings.'

Example 50 illustrates an Instrumental which is somewhere between a direct and indirect use by the agent and which emphasizes the means and manner in which the event occurs.

50. Inst.NP
 yimënëm doh - e
 we.went canoe-INS
 'We went by canoe.'

c. MANNER INSTRUMENT ROLE

Manner Instrument is defined as the role of the inanimate entity which is intimately related to the Patient NP (including body parts) and is manipulated directly in the action of the predicate by an agent to realize the predication.

51. Ins.NP Ins. NP
 yawym tir - e wura - e faknihatë yimër
 dogs hand-INS foot-INS having.gotten he.went
 'Having gotten the dogs by hand and foot, he went.'

D. NUCLEAR NOUN PHRASES (VERB AGREEMENT)

A Nuclear NP is defined as an NP which is obligatory in a given clause type, and/or potentially coreferenced by one of two verbal affixes. Nuclear NP's distinguish clause types along the parameter of transitivity (cf. Table 76).

1. GENERAL FEATURES

The three most common Nuclear NP's in Alambalak are Subject, Inner Object, and Outer Object. These constructs are not understood to be primitive notions in Alambalak grammar.

"Subject" will be discussed in Section VII.C.3 as a conflation of several features. The use of the notion Subject is justifiable, however, for practical as well as theoretical reasons.

The widespread use of the term 'subject', with connotations which are more or less identifiable in a large number of the world's languages, makes the term useful in a language such as Alambalak where a traditional 'subject' can be identified in most clauses. Its use here is especially desirable in the case of scholars who may wish to make cursory reference to Alambalak syntax.

In contrast to the term 'Subject', the terms 'Direct Object' and 'Indirect Object' as used in Traditional grammar are considerably misleading when applied to Alambalak syntax.

Basic structural patterns of traditional D.O. and I.O. are commensurate with Alambalak Inner Object and Outer Object respectively. Namely, the D.O. in traditional grammar is structurally the same in both transitive and ditransitive clauses. Similarly, the Alambalak Inner Object is identified in one way (by verb agreement) for Multiple-place clauses.

The pattern of mapping semantic case roles onto D.O. and I.O., however, is not the same as the Alambalak mapping onto Inner Object and Outer Object. The semantic case role traditionally associated with D.O. (i.e., patient) is the same for transitive and ditransitive clauses alike. For Alambalak, however, the roles encoded by Inner Object are not the same for Two-place and Three-place clauses. The differences are

diagrammatically represented in Table 101.¹

Table 101: Two Systems of Role Encoding by Objects

<u>Semantic Case Roles</u>	<u>Traditional Constructs</u>			<u>Alamblak Constructs</u>		
	<u>Trans</u>	<u>Ditrans</u>		<u>2-Place CL</u>	<u>3-Place CL</u>	
	D.O.	D.O.	I.O.	In.Obj.	In.Obj.	Out.Obj.
Patient	x	x		x		x
Recipient/ Benefactive			x		x	

The D.O. NP in traditional grammar has been closely associated with the Patient role which it consistently encodes. To use a traditional label for NP's which do not consistently encode the same role as they do in traditional grammar is considered to be more confusing than introducing new labels in a grammar of Alamblak.

As was previously mentioned, there are linguistic reasons for establishing the constructs Subject, Inner Object, and Outer Object, even though there is evidence that they are actually composed of more primitive elements. More frequently than not, the components of these constructs coincide in one NP; thus, establishing complex constructs is a descriptive convenience and expresses a 'linguistically significant generalization'.

2. SYNTACTIC FEATURES

In this section we discuss and illustrate the general syntactic features of nuclear NP's.

¹ Faltz (1978:76) has identified three patterns of encoding the Recipient semantic case role in the world's languages. Alamblak is of the type he refers to as a "D.O. type of indirect object marking". The terminology is somewhat confusing here. By 'indirect object marking', Faltz is referring to the semantic case role (e.g., Recipient or Benefactive) which is generally associated with an indirect object. By this system the Recipient role is encoded by the same form which is identified as direct object in transitive clauses. In a ditransitive clause a Patient NP (encoded by the D.O. in transitive clauses) typically loses many of its D.O. properties.

In general, the Subject NP is unmarked for case, is coreferenced by the first pronominal suffix on the verb, and occurs left-most vis-à-vis other Nuclear NP's in the clause. Subject NP's in 1/2-place, 2-place and 3-place clauses are illustrated in example 52.

52(a). $\overbrace{\text{yima} - \text{r}}^{\text{Subj. NP}} \quad \text{yi} - \text{m}\ddot{\text{e}} - \text{r} \quad \overbrace{\text{A}}$
 person-3SM go-R.PST.3SM
 'The man went.'

(b). $\overbrace{\text{yima} - \text{r}}^{\text{Subj. NP}} \quad \text{f}\ddot{\text{e}}\text{h} - \text{m} \quad \text{fak} - \text{m}\ddot{\text{e}} - \text{r} - \text{m} \quad \overbrace{\text{A}}$
 person-3SM pig-3PL get-R.PST-3SM-3PL
 'A man got the pigs.'

(c). $\overbrace{\text{yima} - \text{r}}^{\text{Subj. NP}} \quad \text{f}\ddot{\text{e}}\text{h} - \text{m} \quad \text{he} - \text{m}\ddot{\text{e}} - \text{r} - \text{t} \quad \overbrace{\text{A}}$
 person-3SM pig-3PL give-R.PST-3SM-3SF
 'A man gave her pigs.'

The Inner Object is unmarked for case and is coreferenced by the second pronominal suffix on the verb.

53(a). $\text{yima} - \text{r} \quad \overbrace{\text{tu} - \text{r} - \text{ho} \text{ ku}\ddot{\text{n}} - \text{t}}^{\text{In. Obj. NP}} \quad \text{fakrme} - \text{m}\ddot{\text{e}} - \text{r} - \text{t} \quad \overbrace{\text{U}}$
 person-3SM E/R-3SM-GEN house-3SF run.away-R.PST-3SM-3SF
 .PRON
 'A man ran away (to) his own house.'

(b). $\text{yima} - \text{r} \quad \overbrace{\text{f}\ddot{\text{e}}\text{h} - \text{m}}^{\text{In. Obj.}} \quad \text{fak} - \text{m}\ddot{\text{e}} - \text{r} - \text{m} \quad \overbrace{\text{U}}$
 person-3SM pig-3PL get-R.PST-3SM-3PL
 'A man got the pigs.'

(c). $\text{yima} - \text{r} \quad \overbrace{\text{met} - \text{t}}^{\text{In. Obj.}} \quad \text{he} - \text{m}\ddot{\text{e}} - \text{r} - \text{t} \quad \text{f}\ddot{\text{e}}\text{h} - \text{m} \quad \overbrace{\text{U}}$
 person-3SM woman-3SF give-R.PST-3SM-3SF pig-3PL
 'A man gave the woman the pigs.'

The Outer Object is unmarked for case and is not coreferenced on the verb.

54(a)

		Out. Obj. NP
	yima - r fakrme - mē - r	tu - r - ho kuñ - t
	person-3SM run.away-R.PST-3SM	E/R-3SM-GEN house-3SF
		.PRON

'A man ran away (to) his own house.'

(b).

		Out. Obj.
	yima - r fēh - m fak - mē - r - m	briha - t
	person-3SM pig-3PL get-R.PST-3SM-3PL	outside-3SF

'A man got pigs (in) the forest.'

(c).

		Out. Obj.
	yima - r met - t he - mē - r - t	fēh - m
	person-3SM woman-3SF give-R.PST-3SM-3SF	pig-3PL

'A man gave a woman pigs.'

Chapter VII

SEMANTICS OF INDEPENDENT CLAUSES

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Chapter VII

SEMANTICS OF INDEPENDENT CLAUSES

A. INTRODUCTION

The basic structures of the clause and its constituents have been described in Chapter VI. The ways in which this basic equipment of the clause is used to talk about the real world are determined largely by semantic considerations. In this chapter we look at the clause from a semantic viewpoint, considering first the structure of the clause as a whole and then its elements and the ways in which they interrelate. The third section of the chapter deals with the interrelationship of syntax and semantics. That section investigates aspects of the encoding of semantic roles (section C.1) and the structural reflexes of the semantic features of transitivity (section C.2), and the notions referentiality and perspective (section C.3).

B. ROLE STRUCTURE

In general terms, the semantic structure of the clause we are concerned with here can be described as structured relations which allow the speaker to identify the role each participant is playing (Participant roles), the relationships of staging elements (i.e., the setting) to the predicate and/or participants (Orientation roles), and the means and/or manner whereby the predication is carried out (Modal roles). The elements of the clause, then, include the predicate and its arguments which have Participant, Orientation, or Modal roles in the predication.

The discussion is organized as follows: Each set of semantic roles is explicated and defined, followed by a discussion of the overt case markers and case-marking systems which encode them. The surface case markers are defined semantically and rules are postulated whereby each overt marking may be interpreted as a specific role.

It is suggested here that a 'surface' case-marking system can and should be semantically characterized. Such a concrete general specification will not fully explicate the precise

semantic roles of NP's in most clauses. A more finely-analysed system of covert role relationships is necessary to complete the picture. Fillmore (1968) emphasized the inadequacy of assigning single comprehensive meanings to surface case markers since, for one thing, such meanings could not represent satisfactory semantic primitives. It is contended in this section, however, that both the overt case-marking system and the covert system of specific roles have semantic functions and an attempt should be made to describe them both.

1. ORIENTATION ROLES

Orientation roles provide the spatial and temporal orientation of the proposition. They are summarized as follows with approximating English glosses:

Adessive	'at'
Path	'along'
Allative	'to/toward'
Elicative	'from'
Efficient Cause	'because of'
Point of Reference	'in relation to'
Interior Location	'in'
Surface Location	'on'
Temporal Reference	'in/on (time referring word)'

These roles and the case-marking systems which encode them have been discussed in section VI.C. We have therefore only summarized them here and now proceed to discuss interpretation rules associated with the case markers that encode them.

a. ADESSIVE NP

As indicated by its label, this case marker may be characterized by the Adessive role which it primarily encodes.

Adessive NP: Adessive role with non-motion verbs
Allative role with motion verbs

The adessive NP is interpreted as having an Allative role when co-occurring with motion verbs and an Adessive role

when co-occurring with non-motion verbs, v. examples 25 and 26 in Chapter VI.

b. PATH NP

The Path NP is characterized by the Path role which it encodes, v. example 29 in Chapter VI.

Path NP : Path role

c. REFERENT NP

The Referent case marker is a multifactor case marker encoding five roles as well as functioning as a comitative conjunction. As such this case marker is very generalized with little semantic content. It does little more than identify a referent which is relevant to the predication in some way.

Referent NP: Adessive role with non-motion verbs
and a locative head noun
Allative role with motion verbs
Elativ role
Efficient Cause role ¹ with an inanimate
head noun
Point-of-Reference role relating a
locative noun and another NP

Interpretation Rules

Only a partial explanation of an interpretation strategy for the Referent case marker can be attempted here. In general terms, the semantic content of the participants and/or predicate of a given clause will constrain the possible interpretations of the Referent NP.

The Adessive role is assigned to a locative nominal co-occurring with non-motion verbs (v. example 30 in Chapter VI).

The Point-of-Reference role relates a locative positional with another NP (v. example 39 in Chapter VI).

Most manifestations of the Referent NP have potentially

¹ The Efficient Cause role is encoded by the Referent marker only when occurring with an inanimate head noun. See the discussion on causative constructions (§ V.B.3.a) for a comprehensive discussion of how causatives are expressed in Alambalak.

vague or ambiguous interpretations. An 'ambiguity' implies that a construction has the possibility of two or more interpretations involving distinct semantic roles. The hearer must make a choice since the construction must mean one thing or another but not either or both. By 'vagueness' it is meant that the construction in question does not specify one way or the other but may be understood with any of its possible interpretations.

One case of vagueness arises when a Time Word manifests the head of the Referent NP. It may be interpreted either as a simple Point-of-Reference or as an Efficient Cause role. Example 38(a) in Chapter VI is repeated here as example 1.

1. ɪnd yha - r - pnë dbëhna - më - w - m
 DEM time-3SM-REF sick - R.PST-IMPF-3PL
 { 'At this time they were continually sick.'
 { 'At this time and because of it they were continually sick.' }

The vagueness arising from a sentence like example 1 has to do with conceptualization processes. When two events or an event and a particular time or location are frequently associated together, an observer is likely to interpret the whole situation as involving a cause-and-effect relationship.

Two cases of ambiguity can be discussed: when a Referent noun phrase exhibiting an animate Head co-occurs with a motion verb; and when certain motion verbs co-occur with certain Referent NP's exhibiting inanimate Head nouns.

When a Referent noun phrase exhibiting an animate Head noun co-occurs with a motion verb it could potentially be interpreted as Comitative, Allative, or Elative. If the particular exponents of the Head noun and predicate in a given context do not select a particular interpretation for the Referent NP, an interpretation strategy will operate as follows:

Ref NP: Comitative > Allative > Elative

For example,

2. $\overbrace{\text{yën - r - pnë}}^{\text{Ref NP}}$ hinamënënr nuNgwar
 child-3SM-REF we.(2).brought.him bird
 { 'We (two) (I) with the child brought the bird.' }
 { 'We (two) brought the bird $\left\{ \begin{smallmatrix} \text{to} \\ \text{from} \end{smallmatrix} \right\}$ the child.' }

The Referent NP in example 2 will receive a Comitative interpretation unless the context does not allow it, in which case the Allative interpretation will be chosen, or, as a final option, the Elative interpretation.

Another ambiguous construction results when certain motion verbs co-occur with certain Referent Noun Phrases with inanimate heads. In these cases, the Referent NP may be either Efficient Cause, Comitative, Allative, or Elative.

3. $\overbrace{\text{yifën - r - pnë}}^{\text{Ref NP}}$ yimënëṃ
 carving-3SM-REF we.went
 { 'We went because of the carving.' }
 { 'We went with the carving.' }
 { 'We went to the carving.' }
 { 'We went from the carving.' }

There does not seem to be a conventionalized strategy for interpreting a sentence such as example 3, except that the Elative interpretation appears to be the last choice made.

It is suggested here that example 2 has a well-defined interpretation strategy and example 3 does not partially because of the nature of the Head noun of the Referent Noun Phrase. In example 2, an animate NP is a typical exponent of an actor role and therefore the Comitative interpretation which specifies the animate NP as actor is preferred.¹ In

¹ Comrie (n.d.) has suggested that definite and animate direct objects form a natural class. After presenting evidence from a variety of languages to support his claim, he offers an explanation for it. His explanation is essentially that case marking serves as an overt marking of the difference between subjects and objects rather than a marking for identifying subjects and objects independently. His argument seems

the case of example 3, an inanimate noun is a possible exponent for any of the roles involved in the interpretations listed, therefore no role has preference over any other role in an interpretation strategy.

In both cases of ambiguity discussed above, the Adessive role will be assigned to the Head noun of a Referent NP only if the context so dictates. If a context happens to be compatible with both Allative and Elative interpretations, then the Allative role will be chosen. There would seem to be a practical reason for the preference for Allative over Elative interpretation. When changing scenes in a discourse, for instance, closing one scene by telling from where X went is not as important as setting the stage for the next scene by telling to where X went. The latter is essential to the flow of the discourse whereas the former is optional. Since the Elative role is relatively infrequent, the Allative role will be assigned before the Elative role on the basis of probability, where context allows either interpretation.

The importance of the Elative role in discourse in general having been played down, there are specific predicates which require an elative role in their conceptual framework. Thus verbs like fakrme 'run away' and wikna 'buy' will interpret a Referent NP as an Elative rather than an Allative.

Allative and Efficient Cause roles are automatically selected by the semantics of certain predicates and arguments. The Referent NP in example 4 can only be interpreted as

(Cont'd)

particularly convincing for those languages which mark subjects and most direct objects in the same way but distinctively mark definite and/or animate direct objects. Comrie's conclusion is that subjects are typically animate and definite and those direct objects which are animate and/or definite will be the most likely to be confused with subjects and therefore receive specific marking to distinguish them from subjects. Inanimate direct objects, on the other hand, which are marked like subjects (e.g., with the nominative form or no case marking at all), will be interpreted by a strategy which assigns the Actor role to the animate NP and Undergoer role to the inanimate NP. The case here is similar in that the animate NP in example 2 is preferentially assigned to an Actor role (Comitative) and to other roles only where the context so constrains the selection.

Efficient Cause.

4. Ref NP
 mar - r - pnë hipwënë
 sun -3SM-REF we.are.perspiring
 '*We are perspiring because of the sun.*'

d. SPECIFIC SETTING NP

The Specific Setting case marker provides a setting for the predication.

Specific Setting NP: Interior Location
 Surface Location
 Adessive
 Temporal Reference

The interpretation strategy for the Specific Setting case includes an interpretation hierarchy as follows:

 Temporal Reference -- with Time Words
 Interior Surface > Adessive -- with other nouns
 Location > Location

The second part of the strategy means that the left-most interpretation which is compatible with the case-marked noun and the rest of the clause will be chosen as the interpretation of the case marker. For example, the Specific Setting marker will relate the predicate to the interior of a three-dimensional object where that interpretation is compatible with the predicate and participants in the clause. If the 'Interior Location' is not compatible with the rest of the clause, then the 'Surface Location' role will be applied,

etc. down the hierarchy.¹

The procedure can be illustrated with examples 5 and 6.

5. yimar kuñ - t - n korhwër
 man house-3SF-S.SET he.is.sitting
'A man is sitting in the house.'

Example 5 has only one possible interpretation as reflected in the translation. If the Surface Location interpretation is desired by the speaker, the sentence will have to be marked to specifically indicate that as in example 6.

6. yimar yurak kuñ - t - n korhwër.
 man up house-3SF-S.SET he.is.sitting
'A man is sitting up on the house.'

Examples 41 and 42 (Chapter VI) illustrate Surface and Adessive interpretations with case-marked nouns which are compatible with those interpretations but are not compatible with interpretations higher up the hierarchy.

e. GENERAL SETTING NP

The G. Setting case marker provides a setting for the

¹ It is, of course, possible to imagine a context in which these three interpretations (in, on, at) could be ambiguous. Fillmore (1971:17) discusses such an example from Leech (1969),

'at the corner' which means near or in contact with the intersection or meeting of two straight lines or two streets;
 'on the corner' which locates something as being in contact with a particular part of the surface ...; while
 'in the corner' is an expression in which the noun 'corner' is used to indicate a portion of three-dimensional space ...

Such ambiguity does not arise in Alamblak, however. If an object is three-dimensional, then the interior interpretation will be given to the S. Setting case marker when affixes to it, even though it has an external surface compatible with the predicate as well.

predication in much the same way that the S. Setting marker does.

General Setting NP: Surface Location
Temporal Reference

The G. SET case marker contrasts with the S.SET marker in that it has not been observed to encode Interior Location or Adessive roles. The G. Setting case marker does occur with nominalized adverbs to encode the Manner role (cf. the discussion in the next section on Modal roles), a function the S. Setting case marker does not have. A Time Reference and a Surface Location interpretation, are illustrated in examples 44 and 45 in Chapter VI.

f. ALLATIVE NP

The Allative phrase has a unitary function and therefore can be characterized directly by the Allative role (v. example 47 in Chapter VI).

Allative NP: Allative role

2. MODAL ROLES

Modal roles indicate the means or manner in which the predication is carried out. They are defined below.

Manner	--	'the manner in which the predication is realized'
Direct Instrument	--	'the role of the inanimate object (including body parts) used directly by an agent being the means and implying something of the manner in which he realizes the predication'
Indirect Instrument	--	'the role of the inanimate entity used indirectly (that is involving one or more unstated events) by an agent being the means whereby the predication is realized'

Manner Instrument -- 'the role of the inanimate entity which is intimately related to the Undergoer NP (including body parts) and is manipulated directly by an agent and indicates the manner in which the predication is realized'

The case markers which are employed to encode Modal roles are the G. Setting case and Instrument case.

a. GENERAL SETTING NP

General Setting NP: Manner role -- with nominalized adverbs

The G. Setting case and its interpretation as Surface Location and Temporal Reference roles has been discussed under Orientation roles (p. 332). Nominalized adverbs, i.e., adverbs which are terminated with a PNG marker, may be marked with the G. Setting case marker indicating the manner of the predication, as in example 7.

7. G.SET NP
 bumbri - t - nanë pailatr fakrekutabmërt
 hurry - 3SF - G.SET pilot he.switched.it.over
 'The pilot switched it over in a hurry.'

b. INSTRUMENT NP

Instrument NP: Direct Instrument
 Indirect Instrument
 Manner Instrument

There is no general strategy for interpreting the precise role of the Instrument case. The fact that ambiguities exist is itself motivation for the different roles. Example 8 illustrates ambiguity between direct and indirect instrument.

8. maruham kekwenëm ind kury - e
 money we.get DEM tongs-INS
 'We get money {with tongs.
 by means of tongs.}'

The first translation of example 8 suggests a direct use of the tongs (such as by picking up pieces of money from within a clay pot). The second translation suggests an indirect use such as by making and selling decorative tongs.

Example 9 illustrates ambiguity between Direct and Manner Instrument roles.

9. yawyr tir - e faknihatë yimër
 dog hand-INS having.gotten he.went
 'Having gotten a dog_i {by his_i forefeet } he_j went.'
 {with his_j hand(s)}

The first translation of example 9 is appropriate for the Manner Instrument interpretation where the "hands" referred to belong to the dog which the agent took hold of in some unstated way (in contrast to taking hold of his tail, ears, or hind legs, etc.). The second translation is appropriate for the Direct Instrument interpretation where the "hands" referred to are the hands of the agent whereby he grasped some unstated part of the dog (in contrast to picking him up with some other instrument such as a net).

Our discussion of the Orientation and Modal roles has associated these roles with case markers of peripheral noun phrases which typically encode them. These roles, however, may be manifested as nuclear noun phrases of the clause as well. Orientation roles, in general, may be manifested by the Inner and Outer Object NP's. Of the Modal roles, Instruments may be manifested by the Subject NP. The Manner role may occur as an unmarked adverb (but it cannot be coreferenced in the verb). Participant roles, as we shall see next, are typically manifested by nuclear noun phrases.

3. PARTICIPANT ROLES

Participant roles are specifications of the roles, i.e., the types of involvement, that referents of nuclear noun phrases have in the situation which is predicated by the verb. These referents are 'participants' in the situation in contrast to staging elements which provide the orientation or setting for the situation. The Participant roles which are employed in our description of Alamlak clauses are defined below.

- | | | |
|-------------------|---|--|
| Agent (Ag) | : | The role of the animate entity which "instigates an action or acts of its own accord" (Foley and Van Valin, forth coming) |
| Force (For) | : | The role of the entity which unintentionally conditions a state or causes a change of state. (adapted from Longacre's (1976:31) Instrument) |
| Experiencer (Exp) | : | The role of "the animate entity to which a perception, cognition or emotion event or state is attributed" (Foley and Van Valin, forth coming). |
| Patient (Pat) | : | The role of the entity of which a state or location is predicated or which undergoes a change of state or location. |
| Affective (Aff) | : | The role of the animate entity which is either benefited or malaffected in some unspecified way as a result of the predication; or the inanimate entity which is totally (in contrast to being partially) affected by the predication. |
| Range (Rg) | : | The role of the entity that "completes or further specifies the predicate; the product of the activity of a predicate" (Longacre 1976:29). |
| Referent (Ref) | : | The role of the "entity with reference to which an action occurs ..." or "toward which actions, perceptual events, or intentional mental states are directed" (Foley and Van Valin's Referent and Goal, forth coming). |

The appropriateness of a role for a participant in a given situation is dependent on the meanings of the verb and the noun phrase which identifies the participant. Participant roles, then, are essentially features of the semantics of individual verbs and as such are not directly encoded by the syntax.

The syntax establishes only three types of constituents which can encode participant roles, viz., Subject, Inner Object, and Outer Object. The encoding of Participant roles in a clause is one of the major functions of these three nuclear constituents; other functions are discussed in section VII.C.3. The verbal pronominal markers, which are largely responsible for identifying the nuclear NP's, are specifically the indicators of the roles of the Subject and Inner Object and, by inference, the Outer Object. The verb agreement markers, therefore, will dominate our discussion of the case-marking system which encodes the Participant roles. They may be semantically characterized as general frameworks or generalized role indicators within which specific roles of nuclear participants of the clause can be predicted by the class of the verb in the predicate.

The first agreement suffix on the verb, which coreferences what has tentatively been described as the Subject, manifests an Actor function.¹ The second agreement suffix, which coreferences the Inner Object, manifests an Undergoer function. These functions will be defined shortly. The third nuclear NP, the one which is not coreferenced on the verb, manifests the Object function.

The terms "Actor" and "Undergoer" are adapted from A. Hale (1974). Hale's third role is termed the "Site". He never explicitly associates his roles with the grammatical relations of Subject, Direct Object and Indirect Object, although the parallel is obvious.

Hale has restricted his roles to defining relationships

¹ In Section VII.C.3 the notion of Subject will be analysed into its component parts. In that section it will be shown that the verb agreement suffix is indeed governed by the semantic role of the NP.

without "incorporating elements which should actually be analysed as parts of the meanings of individual lexical items" (Hale 1974:61). The system of semantic roles he devises is perhaps the least abstract yet proposed. More abstract role systems proliferate the number of roles by making finer distinctions between them, e.g., Longacre (1976:25) has compared nine case role systems which vary from three to fifteen roles. Longacre (1976:36) suggests that structures of different degrees of abstractness do co-exist and that they "correspond to varying goals and applications of theory".¹

a. ACTOR PERSON MARKER

The first pronominal suffix on the verb functions to designate the Actor in the situation predicated by the clause. The Actor function may be defined as the participant which may be thought of as the causer or performer of, or at the least the entity whose state is predicated by the predicate.

Actor Person Marker: Agent
 Force
 Experiencer
 Patient

The Actor marker can serve to encode Agent, Force, Experiencer, and Patient roles which vary in the degree to which they may be thought of as being performers or causers of a predication. Different Agents may vary along the same lines as well, indicating that the semantic case roles are not primitive notions. This variability will figure in the discussion on features of transitivity in section C.2 in this chapter. There is a neutralization in the Actor function between typical Agentive roles and the non-agentive Patient role in intransitive type predications. This neutralization

¹ Longacre is interested in a detailed role analysis primarily as a means of verb classification. It seems clear that semantic classifications of verbs based on the common semantic features of accompanying noun phrases are valid linguistic generalizations. The more generalized three-term role system is useful for other purposes, e.g. Longacre uses such a system in his analysis of the combinations of predications.

is typical of most languages which do not differentiate these roles in one-place predications.

Example 10 illustrates the different roles which are encoded by the Actor person marker.

- 10(a). ┌──────────────────────────────────┐
A
└──┘
 yima - r fëh-m fayk - r - m
 person-3SM pig-3PL get-3SM-3PL
 'A man got pigs.'
- (b). ┌──────────────────────────────────┐
A
└──┘
 yima - r fëh - m fëhtas - r - m
 person-3SM pig -3PL start.at-3SM-3PL
 'A man started at pigs.'
 (= 'A man was startled by pigs.')
- (c). ┌──────────────────────────────────┐
A
└──┘
 miy - t fëh - m suh - tat - më - t - m
 tree-3SF pig-3PL fall -hit -R.PST-3SF-3PL
 'A tree fell and hit some pigs.'
- (d). ┌──────────────────────────────────┐
A
└──┘
 yën - r rahoy - t korhëy - t - r
 child-3SM post-3SF heavy - 3SF-3SM
 'The post was heavy for the child.'

b. UNDERGOER

The second pronominal suffix on the verb functions to designate the Undergoer in the situation predicated by the clause. The Undergoer function is defined as a non-agentive object which can be thought of as a crucial participant in the situation predicated by the clause. Such a semantically diffuse element can be used to encode many semantic roles, e.g.,

Undergoer Person Marker: Affective
 Patient
 Range

Referent
 Adessive
 Path
 Allative
 Elative
 Interior Location
 Surface Location
 Temporal Reference

Different roles which are encoded by the Undergoer person marker are illustrated in example 11 below.

11(a). ┌──────────────────┐
└──────────────────┘
In.Obj.(Aff) U
 yima - r met - t he - mē - r - t fēh - m
 person-3SM woman-3SF give-R.PST-3SM-3SF pig-3PL
 'A man gave a woman pigs.'

(b). ┌──────────────────┐
└──────────────────┘
In.Obj.(Pat) U
 yima - r fēh - m fak - mē - r - m
 person-3SM pig-3PL get-R.PST-3SM-3PL
 'A man got the pigs.'

(c). ┌──────────────────┐
└──────────────────┘
In.Obj.(Rg) U
 yima - r kuñ - t hiŋna - mē - r - t
 person-3SM house-3SF work -R.PST-3SM-3SF
 'A man built a house.'

(d) ┌──────────────────┐
└──────────────────┘
In.Obj.(Ref) U
 yima - r fēh - m fēhtas - mē - r - m
 person-3SM pig-3PL start.at-R.PST-3SM-3PL
 'A man started (at) the pigs.'

(e). ┌──────────────────┐
└──────────────────┘
In.Obj.(Ad) U
 yima - r ind kmi - t dbēhna - mē - r - t
 person-3SM DEM Village-3SF sick-R.PST -3SM-3SF
 'A man was sick (at) the village.'

11(f). U

In. Obj. (Al)

yima - r tu - r - ho kuñ - t fakrme - më - r - t

person-3SM E/R-3SM-GEN house-3SF run.away-R.PST-3SM-3SF

'A man ran away to his own house.'

(g). U

In.Obj. (Path)

yima - m tekthëmb - t tone - më - m - t

person-3PL river.bank-3SF run-R.PST-3PL-3SF

'Men ran (along) the river bank.'

(h). U

In.Obj. (In.Loc.)

yima - m bro kuñ-t grha - më - m - t

person-3PL big house dance-R.PST-3PL-3SF

'Men danced (in) the big house.'

(i). U

In.Obj. (Sur.Loc.)

yima - m yurak kuñ - t roh - më - m - t

person-3PL up house-3SF sitting-R.PST-3PL-3SF

'Men sat up (on) the house.'

(j). U

In. Obj. (Temp)

yima - m mërm yha - r dbëhna - më - w - m - r

person-3PL (kind. time-3SM sick-R.PST-IMPF-3PL-3SM
of.tree)

'Men were being sick (at) the Mërm tree time (for
flowering).'

c. OUTER OBJECT NP

The Outer Object, the non-coreferenced and non-case marked noun phrase, functions as the semantic Object. The Outer Object role may be defined as a non-agentive object which can be thought of as an important participant in the situation predicated by the clause, although of comparatively less prominence than the Undergoer. The Outer Object is obligatory with some verb types and thus is as important as the Inner Object with those verbs at least (cf. Table 102). The Outer Object is less prominent inasmuch as the highly

salient Affective role cannot be encoded by it, but it is always encoded by the Inner Object (Undergoer) when it occurs in a clause. With the exception of the Affective role, all roles which may be encoded by the Inner Object may also be encoded by the Outer Object.

Example 12 illustrates two of the roles which are encoded by the Outer Object noun phrase.

12(a).

		<u>Out.Obj.(Pat)</u>	<u>Out.Obj.(In.Loc)</u>
yima - r	yën - f	yemrë - m	nëNgay - t
person-3SM	child-3D	meat-3PL	dish - 3SF

 këmbri - hay - më - r - f
 put.in-BEN-R.PST-3SM-3SF
 'A man put meat (into) a dish (for) children.'

(b).

		<u>Out.Obj(Pat)</u>	
yima - r	met - t	fëh - m	he - më - r - t
person-3SM	woman-3SF	pig-3PL	give-R.PST-3SM-3SF

 'A man gave a woman pigs.'

C. THE INTERRELATIONSHIP OF SYNTAX AND SEMANTICS IN THE CLAUSE

Chapter VI was devoted to a discussion of the basic syntactic structures of the clause. In the section above we have discussed some of the basic semantic structures of the clause. It has been impossible to keep the two areas completely separate, although some artificial separation has been necessary for the sake of presentation.

In this section we will first discuss the relationship between the semantic role of a participant and the selection of its grammatical role in the clause. This interplay of semantics and syntax will naturally lead to a discussion of the notion of transitivity. That discussion will center on case frames of several classes of verbs and the kinds of semantic roles which are encoded by subject and object noun phrases which occur with each verb type. Finally, the notion of

subject will be analysed in terms of the features of role, referentiality, and perspective; these features will be related to encoding patterns of surface structures.

1. ROLE HIERARCHIES AND THE SELECTION OF NUCLEAR NOUN PHRASES

Role hierarchies were introduced in section VII.B.1 as strategies for interpreting certain case markers (especially the Referent and Specific Setting markers). The role hierarchies discussed here are not presented as ways of deciphering which semantic roles the nuclear NP's are encoding; rather they are presented as constraints on which roles of a given set may be encoded as nuclear NP's in the clause.

The following hierarchies apply to the selection of Actor and Undergoer.

Actor selection: $\left\{ \begin{array}{l} \text{Agent} \\ \text{Force} \end{array} \right\} > \left\{ \begin{array}{l} \text{Experiencer} \\ \text{Patient} \end{array} \right\}$

Undergoer selection:

Affective > $\left\{ \begin{array}{l} \text{Patient} \\ \text{Range} \\ \text{Referent} \end{array} \right\} > \text{Locative roles} > \text{Temporal Reference}$

By the first hierarchy, if an Agent or Force co-occurs with an Experiencer, the Experiencer cannot be coreferenced as the Actor (example 13(a)). If one of the participants is interpreted as a Referent instead of an Agent or Force, then the Experiencer is chosen as Actor and the Referent is coreferenced as Undergoer, e.g., example 13(b).

- 13(a). $\left[\begin{array}{c} \text{(Exp)} \\ \text{yën - m} \end{array} \right] \quad \left[\begin{array}{c} \text{(Ag)} \\ \text{nandëm-r} \end{array} \right] \quad \text{ha - fëhtas - r - m} \quad \left[\begin{array}{c} \text{A} \\ \text{r} \end{array} \right]$
 child-3PL snake-3SM CAUS-start.at-3SM-3PL
 'A snake caused the children to start.'
 (= 'A snake gave the children a start.'

- 13(b). $\overbrace{\text{yën-m} \quad \text{nandëm-r} \quad \text{fëhtas} - \text{m} - \text{r}}^{\text{A}}$
 child-3PL snake-3SM start.at-3PL-3SM
 'Children started (at) a snake.'

The second hierarchy specifies that a role can be coreferenced as Undergoer only in the event that no role to its left on the hierarchy is present in the clause. This hierarchy is illustrated by the clauses in example 14.

- 14(a). $\overbrace{\text{met} - \text{t} \quad \text{mugr} - \text{m} \quad \text{he} - \text{më} - \text{r} - \text{t}}^{\text{U}}$
 person-3SM woman-3SF crocodile-3PL give-R.PST-3SM-3SF
 'A man gave a woman crocodiles.'

- (b). $\overbrace{\text{mett} \quad \text{mugrm} \quad \text{hemërm}}^{\text{U}}$
 yimar $\left\{ \begin{array}{l} \text{Out.Obj} \{ * \text{Aff} \\ \text{Pat} \} \end{array} \right.$ $\left\{ \begin{array}{l} \text{In.Obj} \{ * \text{Pat} \\ \text{Aff} \} \end{array} \right.$
 { 'A man gave a woman crocodiles.'
 'A man gave the crocodiles a woman.' }

The Inner Object in example (b) must be interpreted to be an Affective rather than a Patient role. Note that the role hierarchy determines which participant is encoded as Inner Object and not an animacy hierarchy, since the non-human Affective NP must be chosen as the Inner Object in preference to the human Patient NP.

- (c). $\overbrace{\text{na yima} - \text{r} \quad \text{kuñ} - \text{t} - \text{n} \quad \text{hiti} - \text{më} - \text{an} - \text{r}}^{\text{U}}$
 1S person-3SM house-3SF-S.SET see-R.PST-1S-3SM
 'I saw a man in a house.'

- (d). $\overbrace{\text{na yima} - \text{r} \quad \text{kuñ} - \text{t} \quad \text{hiti} - \text{më} - \text{an} - \text{t}}^{\text{U}}$
 I person-3SM house-3SF see-R.PST-1S-3SF

Example (d) is ungrammatical since the Interior Locative role cannot be coreferenced as Inner Object in preference to the

participant to another which involves "a number of components, each associated with some aspect of effectiveness with which the Transitive event takes place ..." (p. i). Some of these components of transitivity include the number of participants, the potency and volitionality of the agent, the individuation and affectedness of the object as well as features of kinesis, perfective aspect, punctuality, affirmation, and realis mode of the verb. To the extent that positive values of these features are present in a clause, that clause is said to have a relatively high degree of transitivity.

Alamblak clause structure shows some reflexes of the type of continuum of transitivity which Hopper and Thompson (and others ¹) have attempted to define. Some of the proposed features of positive transitivity in Alamblak are as follows: (1) the clause must exhibit two or more participant roles, (2) the referents of which are distinct from each other; (3) the Actor performs or causes the action, (4) exerts control, or (5) acts willingly, or (6) is active; (7) the Undergoer (i.e., the object) is totally affected, or (8) a psychologically affected animate being, (9) potentially affected, or (10) a specific item, (i.e., highly individuated in Hopper and Thompson's terms), or (11) the object toward which an action is projected.

a. CASE FRAMES OF SIMPLE VERBS

We will begin our discussion by presenting the major verb classes which range from the low-in-transitivity end of the scale to the high-in-transitivity end. Other predicate types which fall between the two extremes, and certain types of participants which affect the transitivity of the clause, will provide some insight into factors of transitivity.

We are working on the hypothesis that transitivity is a relative notion, operating on a continuum rather than a system of discrete categories. If that is true, then categories, e.g. verb classes, based on the notion of transitivity are likely to be only rough categories with overlap between them.

¹ Clark (1973), Cook (1978), McLendon (1978), Sugita (1973) and Dixon (1977a:273 ff) are among recent discussions of transitivity.

Depending on the common features which are used as criteria for classification, verbs do seem to group into basic classes with an overlap of transitivity features between the classes.

Verb classes are based on contrasting case frames (i.e., the semantic roles of the nuclear NP's associated with the verb), and the syntactic potential of the verb type to undergo derivational processes which either add to or decrease transitivity. In some cases subclassifications are made on the basis of differing effects of applying these derivational processes to the basic case frame.

Case frames tend to proliferate quickly; Longacre (1976) lists 48 logically possible verb classes based on case frames. Only a sampling of verb types will be presented here; even our sample will not be fully specified for the selectional features of each verb type. The selectional features which are specified are those which are particularly correlated with the syntactic basis of a given verb class. The semantico-syntactic frames used here will include (1) obligatory roles and (2) optional roles (in parenthesis) which are diagnostic to the verb class (being encoded by nuclear NP's), and (3) the syntactic form which encodes them, e.g., Actor (A) and Undergoer (U) verbal pronominal markers, Outer Object (O.Obj), and case-marked noun phrases.

I. 1/2-place Predicates

Case Frame 1

<u>A</u>	<u>U</u>	
[{	Ag
—	}	({
{	}	Loc
Pat	}	Temp
}	})]
		<u>verb types:</u>
		Extrinsic
		Statives, e.g., <u>roh</u> 'sitting'
		<u>tēh</u> 'standing'
		<u>gēnNg̃tay</u> 'be cold'
		Process, e.g., <u>noh</u> 'die'
		Action, e.g., <u>yi</u> 'go'
		<u>grha</u> 'dance'

15. $\overbrace{\text{Subj(Pat)}}^{\text{A}}$ $\overbrace{\text{In. Obj(Loc)}}^{\text{U}}$ $\overbrace{\text{gënNgtay - an - t}}^{\text{A}}$ $\overbrace{\text{- t}}^{\text{U}}$ ¹
 na ïndar kuñ - t gënNgtay - an - t
 I DEM house-3SF cold - 1S -3SF
 'I am cold (in) this house.'

Case Frame 2

- [_____ $\overbrace{\text{Exp}}^{\text{A}}$ ($\overbrace{\text{Loc}}^{\text{U}}$ / $\overbrace{\text{Time}}^{\text{U}}$)] verb type:
 Controlled
 Experiencer, e.g., niNge 'laugh'
 nur 'cry'

16. $\overbrace{\text{In. Obj. (Loc)}}^{\text{U}}$ $\overbrace{\text{nur - beb - më - r - t}}^{\text{A}}$ $\overbrace{\text{- t}}^{\text{U}}$
 ïndar tkit - t nur - beb - më - r - t
 DEM place-3SF cry - bad - R.PST-3SM-3SF
 'He cried badly (at) this place.'

Case Frame 3

- [_____ $\overbrace{\text{Pat}}^{\text{A}}$ / $\overbrace{\text{For}}^{\text{A}}$] $\overbrace{\text{-}}^{\text{U}}$ / $\overbrace{\text{Aff}}^{\text{U}}$] verb type:
 Intrinsic
 Stative, e.g., korchë 'heavy'
 frkih 'full'
 ftotoa 'light
 (i.e., not heavy)'

¹ Example 15 illustrates a general restriction on the Inner Object. An Inner Object must be 'crucial to the predication' (cf. the definition of Undergoer p. 338). Locative and Temporal references are not normally so important, unless they are a point of discussion in a discourse and thus marked as definite. A noun phrase manifesting an Orientation role may be marked as crucial to the predication if it indicates a specific referent or is marked by verbal aspects so as to emphasize its importance. The common verb roh 'sitting' (case frame 1), if unmarked for adverbial aspect will not host a non-specific Locative Inner Object. Thus, *kuñ-t korh-wë-r-t (house-3SF sitting-IMPF-3SM-3SF), 'He is in a house', is unacceptable, whereas kuñ-t kor-hasi-w-r-t (house-3SF sitting-DUR-IMPF-3SM-3SF), 'He is remaining in a house', is much more acceptable. If the Locative or Temporal Referent noun phrase is definite or specific, it readily assumes an Undergoer function, e.g., nanho kuñ-t dbëhnay-r-t (my house-3SF sick-3SM-3SF), 'He was sick in my house'. Other semantic roles are more naturally crucial to particular predications and are not so constrained, e.g., a Patient Inner Object may be non-specific. Case frame 4 verbs host a Locative role obligatorily; the inherent importance of a location to that class of verbs means that a locative Inner Object need not indicate a specific referent. The coreferencing of Orientation roles is considered further in section IX.E.2 where constraints on coreference between clauses are discussed.

17. $\left[\begin{array}{c} \text{(For)} \\ \text{rahoy- t} \end{array} \right] \quad \text{A} \quad \text{U}$
 korhëy - w - t - a
 post-3SF heavy -IMPF -3SF-1S
'The post is heavy for me.'

II. 2-place Predicates

Case Frame 4

[$\frac{\text{A}}{\text{Ag}}$	$\frac{\text{U}}{\text{Loc}}$]	<u>verb type:</u>	
				Action, e.g.,	fknay 'enter'
					fakrmay 'run away in fear'
					wita 'enter up into'

- 18(a). $\left[\begin{array}{c} \text{In.Obj (In.Loc)} \\ \text{kuñ - t} \end{array} \right] \quad \text{A} \quad \text{U}$
 fkne - r - t
 house-3SF enter-3SM-3SF
'He entered a house.'

- (b). $\left[\begin{array}{c} \text{In.Obj(El)} \\ \text{yima - r} \end{array} \right] \quad \text{A} \quad \text{U}$
 fakrmay - t - r
 person-3SM run.away-3SF-3SM
'She ran away from a man.'

Case Frame 5

[$\frac{\text{A}}{\text{Exp}}$	$\frac{\text{U}}{\text{Ref}}$]	<u>verb type:</u>	
				Uncontrolled	
				Experiencer, e.g.,	fëhtas 'start at'
					yindhör 'be happy'
					fsaskë 'be angry'

19. $\left[\begin{array}{c} \text{In.Obj(Ref)} \\ \text{nandëm -r} \end{array} \right] \quad \text{A} \quad \text{U}$
 fëhtas - an - r
 snake-3SM start.at-1S-3SM
'I started at a snake.'

Case Frame 6

[_____ $\frac{A}{\text{Exp}}$ $\frac{U}{\text{Ref}}$] verb type:
 Perception, e.g., wañ 'hear'
 hiti 'see'

20. $\frac{A}{\text{In.Obj(Ref)}}$ $\frac{U}{\text{Ref}}$
 nandëm - r hiti - mē - an - r
 snake-3SM see-R.PST-1S-3SM
 'I saw a snake.'

Case Frame 7

[_____ $\left\{ \begin{array}{l} A \\ \text{Ag} \\ \text{For} \end{array} \right\}$ $\frac{U}{\text{Ref}}$] verb type:
 Action-proc., e.g., was 'pierce'
 tat 'hit'

21. $\frac{A}{\text{In.Obj(Ref)}}$ $\frac{U}{\text{Ref}}$
 nandëm - r was - mē - an - r
 snake-3SM pierce-R.PST-1S-3SM
 'I speared a snake.'

Case Frame 8

[_____ $\frac{A}{\text{Ag}}$ $\frac{U}{\text{Pat}}$] verb type:
 Reflexive Action-
 process, e.g., yuk 'bathe'

22. $\frac{A}{\text{In.Obj(Pat)}}$ $\frac{U}{\text{Ref}}$
 yën - r fuk - an - r
 child-3SM bathe-1S-3SM
 'I bathed the child.'

Case Frame 9

[_____ $\frac{A}{\text{Ag}}$ $\frac{U}{\text{Rg}}$] verb type:
 Factitive, e.g., hiNgay 'make'
 teNg 'blow (= make)
 a fire'.
 wiNdëh 'sing'

23. $\overline{\text{In.Obj (Rg)}}$ $\overline{\text{A}}$ $\overline{\text{U}}$
 kah - t teNg - wë - r - t
 fire 3SF blow-IMPF-3SM-3SF
 'He is blowing up a fire.'
 (= 'He is making a fire by blowing.')

III. 2/3-place Predicates

Case Frame 10

[$\overline{\text{Ag}}$ $\overline{\text{U}}$ $\overline{\text{O.Obj (Pat)}}$] verb type:
 Action-Proc., e.g., gëbrërna 'rub'
 yeñ 'smear'

24. $\overline{\text{Subj (Ag)}}$ $\overline{\text{In.Obj (Aff)}}$ $\overline{\text{O.Obj (Pat)}}$
 na yën-r hëhrampam rmënth-e
 1S child medicine cloth - INS

$\overline{\text{A}}$ $\overline{\text{U}}$
 gëbrërnay - an - r
 rub - 1S-3SM
 'I rubbed medicine (on) a child with a cloth.'

IV. 3-place Locative Predicates

Case Frame 11

[$\overline{\text{Ag}}$ $\overline{\text{U}}$ $\overline{\text{O.Obj (Pat)}}$ $\overline{\text{S.Setting}}$]
 [Loc-Aff] [Pat] [--] [Loc]

verb type:

Locative-Action-Proc.e.g., hëmbre 'put into (a)'
 këmbre 'put into (b)'
 hita 'put'

- 25(a). $\overline{\text{In.Obj. (Loc-Aff)}}$ $\overline{\text{O.Obj (Pat)}}$ $\overline{\text{A}}$ $\overline{\text{U}}$
 na jiNg - t yira - m hëmbray - an - t
 1S insect-3SF fish-3PL put.into-1S-3SF
 .basket
 'I filled the basket (with) fish.'

Table 102: Derived Case Frames

	1 (die)	2 (laugh)	3 (heavy)	4 (enter)	5 (start at)	6 (see)	7 (pierce)
	$\begin{matrix} \underline{A} \\ \{ \text{Ag} \\ \text{Pat} \} \end{matrix}$	$\begin{matrix} \underline{U} \\ \{ \text{Loc} \\ \text{Temp} \} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Exp} & \{ \text{Loc} \\ & \text{Temp} \} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Pat} & \text{For} \end{matrix}$ $\begin{matrix} \underline{U} \\ - \\ \text{Aff} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Ag} & \text{Loc} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Exp} & \text{Ref} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Ag} & \{ \text{Ref} \\ & \text{Pat} \} \end{matrix}$
Transitivity-affecting processes							
Causative	$\begin{matrix} \underline{A} \\ \text{Ag} \\ [+hi control] \\ \text{Ag} \\ [+ mod. control] \\ \text{Ag} \\ [+ low control] \\ \text{Ag} \end{matrix}$	$\begin{matrix} \underline{U} \\ \text{Pat} \\ \text{For} \\ \text{Ag} \\ \text{Pat} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Exp} & \text{Ref} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Ag} & \text{Pat} \\ * \underline{A} & \underline{U} & \underline{O.O} \\ \text{Ag} & \text{For} & \text{Aff} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Ag} & \text{Pat} & \text{Loc} \\ [+hi control] \\ \text{Ag} & \text{For} \\ [+ mod. control] \\ \text{Ag} & \text{Ag} \\ [+ low control] \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Ag} & \text{Exp} \end{matrix}$	
Benefactive	$\begin{matrix} \underline{A} \\ \{ \text{Ag} \\ \text{Pat} \} \end{matrix}$	$\begin{matrix} \underline{U} \\ \text{Aff} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Exp} & \text{Aff} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{For} & \text{Aff} & \emptyset \\ * \underline{A} & \underline{U} & \underline{O.O} \\ \text{For} & \text{Aff} & \text{Aff} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Ag} & \text{Aff} & \text{Loc} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Exp} & \text{Aff} & \text{Ref} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Ag} & \text{Aff} & \{ \text{Ref} \\ & & \text{Pat} \} \end{matrix}$
Reflexive	—	— ^e	—	—	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Exp-Ref} & \emptyset & \text{tu} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Exp-Ref} & \emptyset & \text{tu} \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} & \underline{O.O} \\ \text{Ag} - \{ \text{Ref} \\ & \text{Pat} \} & \emptyset & \text{tu} \end{matrix}$
Reciprocal	—	—	—(?)	—	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Exp-Ref} & \emptyset \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Exp-Ref} & \emptyset \end{matrix}$	$\begin{matrix} \underline{A} & \underline{U} \\ \text{Ag} - \{ \text{Ref} \\ & \text{Pat} \} & \emptyset \end{matrix}$

^e A reflexive form of case frame two predicates may occur only with a causative construction.

Table 102: Derived Case Frames (Cont'd)

	8 (bathe)	10 (rub)	11 (put)	9 (make)	12 (give)
	$\frac{A}{Ag} \quad \frac{U}{Aff}$	$\frac{A}{Ag} \quad \frac{U}{Aff} \quad \frac{O.O}{(Pat)}$	$\frac{A}{Ag} \quad \frac{U}{\begin{bmatrix} Loc-Aff \\ Pat \end{bmatrix}} \quad \frac{O.O}{\begin{bmatrix} Pat \\ - \end{bmatrix}} \quad \frac{S.Set}{\begin{bmatrix} In. \\ Loc \end{bmatrix}}$	$\frac{A}{Ag} \quad \frac{U}{Rg}$	$\frac{A}{Ag} \quad \frac{U}{Aff} \quad \frac{O.O}{\begin{Bmatrix} Pat \\ Ref \end{Bmatrix}}$
Transitivity-affecting processes					
Causative	— **	— **	—	—	—
Benefactive	—	—	$\frac{A}{Ag} \quad \frac{U}{Aff} \quad \frac{O.O}{Pat} \quad \frac{S.Set}{In.Loc}$	$\frac{A}{Ag} \quad \frac{U}{Aff} \quad \frac{O.O}{Rg}$	—
Reflexive	$\frac{A}{Ag-Aff} \quad \frac{U}{\begin{Bmatrix} Loc \\ Time \end{Bmatrix}}$	$\frac{A}{Ag-Aff} \quad \frac{U}{\emptyset} \quad \frac{O.O}{\begin{Bmatrix} Pat \\ tu \end{Bmatrix}}$	$\frac{A}{Ag-Pat} \quad \frac{U}{\emptyset} \quad \frac{O.O}{\begin{Bmatrix} Loc \\ tu \end{Bmatrix}} \quad \frac{S.Set}{\begin{Bmatrix} In. \\ Loc \end{Bmatrix}}$	—	—
Reciprocal	$\frac{A}{Ag-Aff} \quad \frac{U}{?}$	$\frac{A}{Ag-Aff} \quad \frac{U}{\emptyset} \quad \frac{O.O}{(Pat)}$	$\frac{A}{Ag-Pat} \quad \frac{U}{\emptyset} \quad \frac{O.O}{\begin{bmatrix} Loc \\ - \end{bmatrix}} \quad \frac{S.Set}{\begin{bmatrix} - \\ In. \\ Loc \end{bmatrix}}$	—	$\frac{A}{Ag-Aff} \quad \frac{U}{\emptyset} \quad \frac{O.O}{Pat}$

** A causative form of predicates of case frames 8 and 10 may occur only with a reflexive construction.

may be causativized; of the first five, all except number four have only one obligatory participant role, and all except number five have no reflexive and/or reciprocal form. The remaining, numbers six to twelve, have two or more obligatory participant roles; none of these may be causativized, all have a reciprocal form, and all but the last two have reflexive forms. The benefactive process does not correlate with either end of the Table, but rather it operates on all case frames where it does not result in doubling on Affective roles (cf. the discussion on p. 354-56). Case frames four and five are in an area of overlapping transitivity features according to the basis whereby the Table is arranged. The continuum from low to high transitivity will be evident in comparing other case frames as well.

The features of transitivity which were summarized earlier can be deduced from the ways in which the four processes change transitivity and from the features of the individual case frames themselves. The processes affecting transitivity are discussed in section b and features of transitivity associated with the case frames are discussed in section c.

b. CAUSATIVE, BENEFACTIVE, REFLEXIVE AND RECIPROCAL PROCESSES

Valency Change and the Grammatical Roles of the Causee and Affectee

The causative process increases transitivity by generally adding one participant. In most cases the additional participant is marked as Actor and is the causer of the state or event. The causee, manifesting the Undergoer function, usually functions like an Actor (with Agent, Force, Experiencer, or Patient role).

Comrie (1974) has developed a general framework for a discussion of causative constructions in Universal Grammar. In his schema the Noun Phrase Accessibility Hierarchy (cf. Keenan, E. and B. Comrie 1977) which he has generalized as the Case Hierarchy plays a central role.

According to the "paradigm case" (Comrie 1974:81) the causee NP in a given clause will be demoted to the next available position down the hierarchy from direct object to the level of obliques depending on the grammatical roles which are already filled by NP's in the non-causative form of the clause. Languages which do not demote the causee in a completely regular way are said to digress from the "paradigm case" by processes of "syntactic doubling", "extended demotion", or "causative blockage."¹

Within Comrie's framework Alamlak is a language with causative blockage below D.O., that is, causee demotion is not allowed below the level of D.O. Syntactic doubling is not possible for the D.O. position, called Inner Object in Alamlak. Doubling of the Outer Object position is allowed only in morphologically non-derived clauses.

Synthetic causativization, then, operates on intransitive-like verbs deriving two-place causative constructions from them with the causee in the grammatical role of Inner object. Causative expressions formed with two- or three-place verbs are normally analytical in nature. Experiencer verbs are interesting examples to examine more closely since they are deviant in various ways. The two types of Experiencer verbs will be discussed in this respect in the next section.

It is very unusual for a language to have morphological causative constructions which are restricted to basically intransitive predicates. The explanation for this constraint is to be found in the historical origin of causatives in Alamlak, viz., the serial verb construction. This point is taken up in section VII.C.2.e. where case frames of serial constructions are discussed.

¹ These notions are defined as follows: Syntactic Doubling is the manifestation of two NP's of the same case; Extended Demotion is the process whereby the causee is manifested in a case lower down the hierarchy than is necessary (that is, skipping an available position on the hierarchy which is not manifested by an NP in the clause); Causative Blockage is the process whereby the causee is blocked from demoting according to the paradigm case.

Like the causative construction, a benefactive construction, also adds a participant, thus increasing transitivity. The additional participant functions as an Undergoer in the Affective role, i.e., is an animate object which is psychologically affected, or an inanimate entity which is totally affected.

A major difference between causative and benefactive structures has to do with valency changes. Whereas causatives are restricted to deriving 2-place predicates from 1/2-place verbs (or intransitive-like 2-place verbs in the case of Uncontrolled Experiencer verbs) benefactives may derive 2-place or 3-place verbs from 1/2-place and 2-place verbs. Benefactives can derive four-place verbs from 3-place locatives but not from basic 3-place verbs. Example 27(a) illustrates a derived three-place benefactive and example (b) is an ungrammatical causative construction with the same verb.

- 27(a). $\overbrace{\text{Subj.}} \quad \overbrace{\text{Inner Obj.}} \quad \overbrace{\text{Out. Obj.}}$
 yima - r yimat - r kriy - t tat - hay - mē - r - r
 person-3SM friend-3SM chicken-3SF hit-I.BEN-R.PST-3SM-3SM
 'A man hit (= killed) a chicken for the benefit
 of a friend.'

- (b). $\overbrace{\text{Subj}} \quad \overbrace{\text{In. Obj}} \quad \overbrace{\text{Out. Obj}}$
 * yima - r yimat - r kriy - t $\left\{ \begin{array}{l} \text{hay} \\ \text{ha} \\ \text{ka} \end{array} \right\}$ -tat - mē - r - r
 person-3SM friend-3SM chicken-3SM CAUS-hit-R.PST-3SM-3SM
 * 'A man caused a friend to hit a chicken.'

The benefactive can derive a four-place predicate from a 3-place locative predicate as in example 28(a), but not from a simple 3-place predicate (example (b)).

- 28(a) $\overbrace{\text{Subj.}} \quad \overbrace{\text{In. Obj}} \quad \overbrace{\text{Out. Obj}} \quad \overbrace{\text{Out. Obj.}}$
 na yima - r yemrē-m nēngay-t këmbri - hay - mē - an - r
 1S person-3SM meat-3PL plate-3SF put.into-I.BEN.R.PST-1S-3SM
 'I put meat into a plate for a man.'

These restrictions are consistent with restrictions on serial verb constructions in general. Two verb roots must have the same Actor unless a second Actor is interpreted as an Instrumental or Force role (inanimate actor, thus a non-agent) as in example 31.

31.

<u>Subj. (Ag)</u>	<u>Out. Obj.</u> (Pat-For)	<u>In. Obj.</u>
yima - r	mīy - t	team - f
person-3SM	tree-3SF	coconut-3D
		foh - tat-më - r - f
		fell-hit-R.PST-3SM-3D
		.palms

'A man felled a tree (causing the tree to) hit (two) coconut palms.'

When a causative and benefactive co-occur the causer is marked as Actor and the Affectee is coreferenced as the Undergoer (Inner Object NP), e.g.,

32.

<u>Subj (Ag)</u>	<u>Out. Obj (Pat)</u>	A	U	<u>In. Obj (Aff)</u>
na	yawy - t	hay - noh-hay - më	-an -m	rëm
1S	dog-3SF	CAUS-die-BEN-R.PST-1S-3PL		3PL

'I caused a dog to die, affecting them.'

Reflexives

The reflexive form reduces transitivity by effecting the loss of the transfer of action from one participant to another, which is the basic part of the definition of transitivity. Structurally there is no participant manifested in the Undergoer function (with the exception of Reflexive predicates in case frame eight). Semantically, the Actor function manifests a coalescence of roles of the Actor and Undergoer functions of the underived form. Most reflexive constructions employ the Emphatic/Reflexive pronoun to clarify that the identity of the referent of the Actor function and that of the Undergoer function is the same. Examples of reflexive constructions are given in 33.

to illustrate other features of transitivity.

c. OTHER FEATURES OF TRANSITIVITY

In case-frames one and two, there is only one obligatory NP. When there are two (one manifesting an Agent or Patient, and another manifesting a Locative or Temporal role coreferenced as Undergoer), the Undergoer is usually marked as definite. Thus the predicates of case-frame one and two may structurally parallel other transitive predicates, i.e., increase in transitivity, if the Inner Object is highly individuated. The effect of causativization on case-frame-two predicates will be discussed in comparison with case-frame five.

Case-frame-three predicates (e.g., 'heavy') are at the low end of the transitivity scale. When a predicate of case-frame three exhibits only one participant, it manifests no features of transitivity; i.e., there is only one participant and it has none of the features of an Actor, i.e., is neither performer, causer, controller, nor willingly active. This form may be causativized (a feature of low transitivity), whereby the Actor is now the causer of the state which is an effect upon the Undergoer.

In some ways case-frame-three predicates have a higher transitive factor than those of frames one and two. When two participants occur in underived constructions with case-frame-three predicates, the second participant has features of a higher degree of transitivity than do Undergoers in frames one and two. The Undergoer is affected by the state of the first participant. Example 17 is repeated here as 34.

34. rahoy - t korhëy - w - t - a
 post-3SF heavy-IMPF - 3SF-1S
 'The post is heavy for me.'

The higher transitivity of sentences like 34 compared to sentences like 16 is suggested by the fact that another participant cannot be added by causativization to two-participant clauses in case-frame three, whereas frames one and two have no such restriction. For example, sentence 35 is ungrammatical; without the second, affected participant the

causative form is grammatical (v., 'the rain is making the post heavy.')

35. * bu - r rahoy-t na wih - korhëy - w - r - t
rain-3SM post-3SF 1S rain- heavy - IMPF-3SM-3SF

The predicates of case-frame three have been termed "Intrinsic Statives", in contrast to "Extrinsic Statives" in case-frame one. Intrinsic Statives describe intrinsic or non-transitory features of things which cannot be associated with particular spatial or temporal settings. Therefore they do not host Orientation roles in a nuclear function (i.e., as Inner Object). Structurally the Inner Object position is vacant for participants with other roles. Semantically a participant described in its intrinsic features may be cast as a Force, i.e., a cause of an effect on other participants. Therefore the structural vacancy may manifest an Affective role without recourse to a derived form (viz., Benefactive), even though the benefactive construction is allowable. An Actor which can be interpreted to be the causer of a predication is also then a feature of transitivity which characterizes case-frame-three predicates.

Case-frame-four, predicates (i.e., 'enter') are transitive to the extent that they host two obligatory participants. They are transitive in no other way, however, as evidenced by the fact that they manifest derived causative and benefactive forms but neither reflexive nor reciprocal forms. The explanation for these 'intransitive' characteristics has to do with the nature of the second participant (Inner Object). It lacks most of the features of an Undergoer which mark a positive degree of transitivity. It is in no way affected by the predicate, nor need it indicate a specific referent. It manifests only the weakest feature of transitivity in being the object toward which the action is projected.

The predicates of case frame five, (e.g., 'start at') manifest features of transitivity and intransitivity to a relatively equal degree. On the transitive side of the scale, they host two obligatory participants. The Actor NP (Experiencer role) may be viewed as the performer of the state

or event; the Undergoer NP (Referent) is the object toward which the predication is directed. As a reflex of a certain degree of transitivity, these predicates may assume reflexive or reciprocal forms.

The predicates of case-frame five also manifest intransitive features as suggested by the fact that they may be causativized. At best the Actor NP (Experiencer role) is a very weak actor, being a performer of the state or event but possessing no other actor-like features. The Undergoer NP is also a very weak Undergoer, being hardly more than a catalyst for the situation. These Experiencer predicates maintain this orientation of Experiencer as Actor rather than the referent, because the Experiencer is considered to be more of a performer of the action than the Referent is a causer of the action, (cf. example 19). The Experiencer perspective governs these predicates in a situation which is very marginal as far as deciding which of two participants is to be viewed as the Actor, i.e., the controlling, initiating, or performing participant.

The potential for causativization has been appealed to as evidence of the intransitivity of case-frame-five predicates. Even here, however, these predicates are more transitive-like than other causativizable predicates. This is so, because no participants are added by causativization, a feature which is unique to this class of predicates. The causativization process merely reverses the perspective by viewing the Referent as an active causer of the predication and the Experiencer as an affected object and less of a controlling performer of the action.

The causative process still increases transitivity, although without adding participants. Transitivity is increased by the Actor NP becoming a causer and not merely a performer, and by the Undergoer becoming an affected object and not merely a catalyst or incidental cause of the predication. Compare the causative form with the underived form of example 19, repeated here as example 36(a),

are termed 'Controlled Experiencers', since they are encoded as controlling Actors in causative constructions.)¹ The Experiencer role remains in the Actor function with the features of performer of the action who exerts control over the action.² These predicates presuppose at least a greater degree of control than do the Uncontrolled Experiencers (e.g., 'be startled', 'be happy', 'be angry') which portray the Experiencer as Undergoer in causative constructions. To this extent Controlled Experiencer verbs are more transitive than Uncontrolled Experiencers. Controlled Experiencer verbs are less transitive than Uncontrolled Experiencer verbs, however, by other criteria (e.g., the potential for reflexive and reciprocal constructions). The feature of control on the part of the Actor is thus only a weak feature of transitivity; it can characterize an Actor even when it is the only participant in the clause.

Predicates of case-frame-six (perception verbs) are the first of the fully transitive predicates, according to structural and syntactic criteria. That is, two obligatory participants occur in underived forms, and the verb may not be causativized but may have reflexive or reciprocal forms. According to our list of transitivity features, however, this class only manifests a low degree of transitivity. The Actor NP is perhaps the performer, exerting some control but it is not an active causer of the predicate. The Undergoer NP is only potentially affected, but typically nothing more than a catalyst which enables the predication to be completed.

Predicates of case-frame-seven (e.g., 'pierce') are the transitive set par excellence. There are two obligatory participants. The Actor NP is typically a controlling causer who is active in the predication; the Undergoer NP is

¹ The causative formative is functionally reduced to being a mere transitivizer with Controlled Experiencer predicates (case-frame two). The participant which is added by the transitivizer is an Undergoer, which is potentially affected by the predicate (e.g., 'laugh') and not a causer.

² Laughing is considered to be a controllable action in Alambak society. It is very important, for example, to control laughing when strangers are around who may misinterpret laughing to be associated with them.

since it potentially hosts a third nuclear participant. Furthermore, the Undergoer marker cannot coreference an NP with an Orientation role in reflexive forms due to the role hierarchy for Undergoer selection, which restricts Orientation roles from the Undergoer function when a Patient role potentially may occur in the Undergoer slot.

Predicates of case-frame eleven (e.g. 'put') are highly transitive with a potential for three nuclear participants. When the third participant (Locative) is manifested as a nuclear participant, it may supersede a Patient role, which is higher on the role hierarchy for selecting the Undergoer function, while the Patient occurs as the Outer object. This is permissible only because the Locative role coalesces with the Affective role, which supersedes a Patient for the selection of Undergoer. The Affective role with an inanimate location indicates a total (in contrast to a partial) affect of the referent. This feature of total affect of the Undergoer is one of the features of high transitivity suggested by Hopper and Thompson.

The semantic contrast between sentences having the Locative role amalgamated with Affective as an Inner object and those with the Locative role as a peripheral case-marked NP is illustrated in example 25 (p. 350). An animate location in the Affective role indicates affectedness; in a locational role unaffectedness is implied, as illustrated in example 39.

- 39 (a) .
- | | | | | |
|------------|--------------------|---------------------------|-------------------|--------|
| | <u>In.Obj(Pat)</u> | <u>S.Setting(Sur.Loc)</u> | | U
┌ |
| yima - r | kahpa-m | nanho met - t - n | hëta - më - r - m | |
| person-3SM | oil-3PL | my woman-3SF-S.SET | put-R.PST-3SM-3SF | |
- 'A man put oil on my wife.'
(Implication: the oil did not affect her.)

- (b) .
- | | | | | |
|------------|---------------------|-------------------|-------------------|--------|
| | <u>In.Obj (Loc)</u> | <u>O.Obj(Pat)</u> | | U
┌ |
| yima - r | nanho met - t | kahpa-m | hëta - më - r - t | |
| person-3SM | my woman-3SF | oil-3PL | put-R.PST-3SM-3SF | |
- 'A man put oil on my wife.'
(Implication: the oil did affect her.)

Predicates of case-frame nine (Factitive) are transitive predicates which cannot be reflexive. A transitive action which cannot be reflexive suggests a strict maintenance of the transference of action by keeping the participants distinct, thus manifesting a high degree of transitivity.

The predicate of case-frame twelve ('give') is listed as the highest in transitivity on Table 102. The reason for this placement is the combination of having three nuclear participants and the constraint against deriving a reflexive form.

Although Table 102 does not exhaust all of the verb types in Alamlak, it does illustrate the range of transitivity among Alamlak predicates. Our discussion has focussed on some of the features involved in transitivity. Other verb types combine the features discussed above in various ways. Ultimately the full specification of verbs must be left for the lexicon.

The effects of inalienable possession in the clause will be discussed next.

d. SYNTACTIC INALIENABLE POSSESSION

The discussion of transitivity thus far has focussed on selectional features of verbs and how certain derived constructions modify basic case frames of verbs. The selection of clause constituents themselves may also modify the basic case frame of predicates. In particular, the selection of an inalienably-possessed item will affect the case frame of a verb since its presence automatically implies the presence of another entity (the possessor) which is inextricably involved with the possessed item. Given the necessity of a second entity, a role may be assigned to it in the clause, either as Affective or Referent.

An inalienable possession in Alamlak is an item which is thought to be an integral part or possession of an animate being. Specifically, these items include body parts, names, and odours.

Predicates of case-frames one (e.g., 'die') and three (e.g., 'heavy') may select inalienable possessions as Actors (Force role). Case-frames five (e.g., 'be startled'), six

(e.g., 'see'), and seven (e.g., 'pierce') may select inalienable possessions as Undergoers or Objects (i.e., Inner Objects or Outer Objects) in a Referent role. Case frame ten (e.g., 'rub') may select inalienable possessions as Undergoers or Objects (in a Patient role).¹

The case frames of basic classes one and three thus modified by the presence of an inalienable possession have the form [$\frac{A}{\text{For}}$ $\frac{U}{\text{Pat}}$]. There are several possible configurations of a clause involving an inalienably-possessed item. Clauses with items of inalienable possession, with the possessor as Patient role (case-frames one and three), occur in the following patterns:

Table 103: Inalienable Possession Clause Pattern

<u>RP NP (Patient)</u>	<u>Act (Force)</u>	<u>Predicate</u>
$\left[\begin{array}{c} \text{NP} \\ \text{--} \\ (\text{NP}) \end{array} \right]$	$\left[\begin{array}{c} \text{NP} \\ \text{NP: (Poss.ph} \\ \text{+noun)} \\ \text{--} \end{array} \right]$	$\left[\begin{array}{l} \text{v.stem +A (Force) } \frac{U}{\text{Pat}} \\ \text{v.stem +A (Force) } \frac{U}{\text{Pat}} \\ \text{n.root + v.root +A (Pat)} \end{array} \right]$

The cases of inalienable possessions incorporated into the verb stem (row four of Table 103) have been discussed in V.B.3.b. The other patterns in Table 103 are illustrated in example 40.

- 40 (a). $\frac{\text{Force}}{\text{A}}$
 tha - t gënNgtay - t
 skin-3SF cold - 3SF
 '(Someone's) skin was cold.'
- (b). $\frac{\text{RP NP (Pat)}}{\text{Act (For)}} \frac{\text{A}}{\text{U}}$
 (yën - r) tha - t gënNgtay - t - r
 child-3SM skin-3SF cold - 3SF-3SM
 '{ A child } was cold from (his) skin.'
 He

¹ Referential factors interfere drastically with these constructions so that the grammatical notions of Subject and Inner Object are not sufficient for describing them. These factors will be analysed in the last section of this chapter.

- 40(c). $\overbrace{\text{yënrho tha - t gënNgtay - t}}^{\text{(Force) A}}$
 child's skin-3SF cold -3SF
 'A child's skin was cold.'
- (d). $\overbrace{\text{yënrho tha - t gënNgtay - t - r}}^{\text{Act (Force) A U}}$
 child's skin-3SF cold - 3SF-3SM
 'A child was cold from his skin.'

The pattern of verbal cross-referencing exemplified in example 40(d) indicates that the verbal person marker system encodes participant roles in the clause and is not simply a concord system; the participant which is coreferenced as Undergoer is not an independent clause constituent but rather is embedded as a possessive phrase in the NP which is coreferenced by the Actor marker on the verb.

The clauses in example 40 contrast with those which manifest alienable possessions in the Actor role. In those cases the possessor cannot be coreferenced as Undergoer; in fact, it cannot be a nuclear NP, unless the construction is in a derived causative or benefactive form. Compare examples 40(b) and (d) with 41(a) and (b).

- 41(a). $\overbrace{\text{*yima - r}}^{\text{RP NP}}$ $\overbrace{\text{yën - t gënNgtay - t - r}}^{\text{Act (Pat) A U}}$
 person-3SM child-3SF cold -3SF-3SM
- (b). $\overbrace{\text{yimarho yën - t gënNgtay - t}}^{\text{Subj (Pat) A U}}$ $\left\{ \begin{array}{l} \emptyset \\ \text{*r} \end{array} \right\}$
 man's child-3SF cold - 3SF - *3SM
 $\left\{ \begin{array}{l} \text{'A man's child was cold.'} \\ \text{*'A man was cold from his child.'} \end{array} \right\}$

When the basic case frame three (e.g., 'heavy') includes an inalienable possession manifesting the Actor function, the case frame assumes the following configuration:

[$\overbrace{\quad}^{\text{A}}$ For $\overbrace{\quad}^{\text{U}}$ Pat].

This modified frame contrasts a Patient role with the Affective role of the basic case frame viz., [___ $\frac{A}{\text{For}}$ $\frac{U}{\text{Aff}}$]. The semantic contrast is illustrated in example 42. The predicate in 42(a) has the basic case frame as it appears in Table 102. The case frame of the predicate in (b) has been modified for inalienable possession.

42(a). $\frac{\text{RP NP(Aff)}}{\text{na}} \frac{\text{Act(For)}}{\text{rahoy -t}} \frac{\text{A}}{\text{korhëy -wë -t - a}} \frac{\text{U}}{\text{LS}}$
 post-3SF heavy-IMPF-3SF-1S
 'The post is heavy for me.'

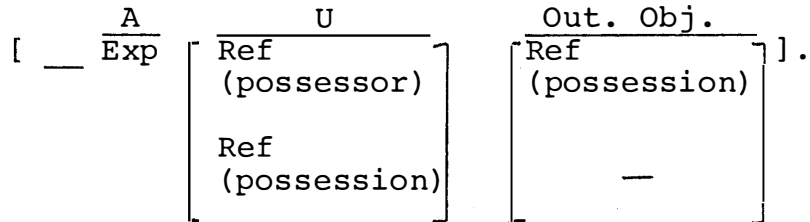
(b). $\frac{\text{RP NP(Pat)}}{\text{na}} \frac{\text{Act(For)}}{\text{wura - t}} \frac{\text{A}}{\text{korhëy -wë -t - a}} \frac{\text{U}}{\text{LS}}$
 leg - 3SF heavy-IMPF-3SF-1S
 'I am heavy from (i.e., because of) (my) foot.'
 (= 'I feel heavy, i.e., sluggish ...')

The difference between example 42(a) and (b) is that a statement about an inalienably possessed item is in some sense a statement about the possessor. In example (b) the Undergoer is heavy, therefore he is in a Patient role being the entity of which a state is predicated. In example (a) the Undergoer is not heavy, but, in an Affective role, is benefited or malaffected in some unspecified way as a result of the predication. A syntactic result of this semantic difference is that a causative form is possible with an inalienable possession as a constituent of the clause, whereas it is not allowable otherwise, i.e., with the [___ $\frac{A}{\text{For}}$ $\frac{U}{\text{Aff}}$] case frame (cf. Table 102). The causative is permissible because it does not add another participant, e.g.,

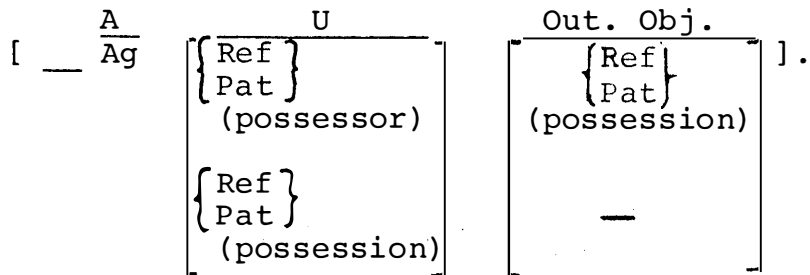
43. $\frac{\text{Act(For-Causer)}}{\text{wura - t}} \frac{\text{A}}{\text{ha - korhë - më - t - a}} \frac{\text{U}}{\text{leg-3SF CAUS-heavy-R.PST-3SF-1S}}$
 '(My) leg made me (feel) heavy.'

Case-frames five (e.g., 'be startled') and six (e.g., 'see), when manifesting an inalienable possession, are modified

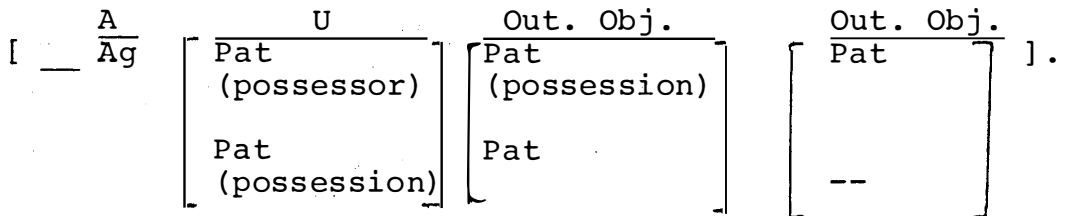
to the following configuration:



Case-frame seven (e.g., 'pierce') is similarly modified to the following:



Case-frame ten (e.g., 'rub') is similarly modified to the following:



Constraints on configurations of clauses corresponding to these modified case frames are similar to those represented in Table 103. Primarily, the possessor participant may be coreferenced by the Undergoer marker on the verb whether or not it is manifested as a constituent NP of the clause. If it is not so manifested, the item possessed may be coreferenced as Undergoer.

- 44(a). $\frac{\text{Out. Obj. (Ref:possession)}}{\text{na' y\`en - r - ho wura - t f\`ehtas - an - r}}$ $\frac{\text{A}}{\text{---}}$ $\frac{\text{U}}{\text{---}}$
 1S child-3SM-GEN foot-3SF start.at-1S-3SM
 'I was startled at a child. (because of his) foot.'

44 (b) . In.Obj(Pat:possessor) U
 na yën - r wura - t fufur -an - r
 1S child-3SM foot-3SF cut - 1S-3SM
'I cut a child (on his) foot.'

(c) . In.Obj (Pat:poss'r) U
 na yën - r wura - t hëhrampa -m gëbrënay-an-r
 1S child-3SM foot-3SF medicine-3PL rub 1S-3SM
'I rubbed medicine (on) the foot (of) a child.'

Example 44(a) contrasts with cases involving alienable possessions, e.g., example 45. 'Child' cannot be coreferenced as Undergoer in example 45(b) as it is in example 44(a).

45(a) . In.Obj(Ref) U
 na yënrho nandëm-t fëhtas - an - t
 1S child's snake-3SF start.at-1S-3SF
'I started (i.e., was startled) at the child's snake.'

(b) . Out.Obj(Ref) U
 * na yën - r - ho nandëm- t fëhtas - an - r
 1S child-3SM-GEN snake-3SF start.at-1S-3SM

The inalienable possession may occur in a case-marked NP for each case frame, in which case it is non-nuclear. In those cases the basic form of the case frame would remain unchanged, e.g.,

46. Subj(Ag) In.Obj(Pat) S.Set(S.Loc) A U
 na yën - r wura - t - n fufur-an- r
 1S child-3SM foot-3SF-S.SET cut-1S-3SM
'I cut a child on the foot.'

e. CASE FRAMES OF SERIAL CONSTRUCTIONS

For any verb complex, only one Actor and one Undergoer may be identified since there are only two verbal pronominal markers per verb phrase. Therefore, combinations of two or more verb roots must be constrained in such a way as to allow

for, at least, the matching of the participants with each verb root and the identification of the role relationships that obtain between the participants and the verb roots. To accomplish such a multiple coding with a minimum of pronominal markers will obviously require constraints on how many different participants may occur, and conventions for determining the coreferentiality of participants when the same participant bears a relationship to more than one verb root.

Our discussion will be limited to combinations of two verb roots. Within this limitation the general framework of coreferencing will be presented by their basic types without going into the details of specifying combinations of roles with verb types, since that has been covered in a previous section.

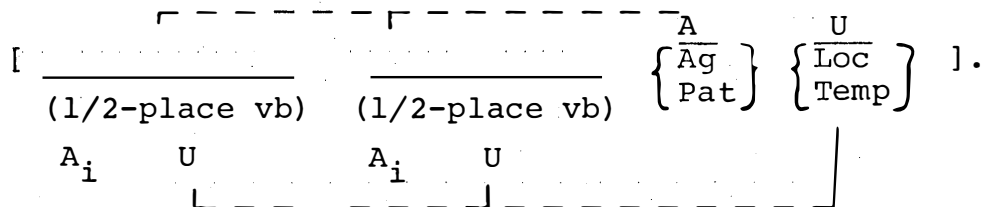
Seven basic case frames are presented here which vary according to the combinations of verb types and patterns of coreferentiality of the participants of the two verbs. The basic governing factor of these constructions is that the complex has one case frame as a whole; one of the Actors of the predicates must be a plausible actor for the whole construction and an Actor or Undergoer must be interpretable as an appropriate Undergoer for the whole. This means that serial roots must have the same Actor (marked as Actor on the construction) unless one of two different Actors may be considered to be the Undergoer, such as the causee in a cause-effect relationship. There is the same general constraint here, however, as with morphological causative constructions, i.e., the doubling of Agents is not permitted. This constraint is the result of the tension between the degree of agentiveness of a participant and the possibility of viewing him as an Undergoer of the whole event. Highly agentive Actors (i.e., agents) cannot be perceived as Undergoers, but less agentive Actors (e.g., Uncontrolled Experiencers) can be. There is variation in the treatment of Actors which are neither strongly nor weakly agentive, e.g., Controlled Experiencers, whether or not they may manifest an Undergoer function in a serial construction.

There is an explanation here for the unusual constraints on morphological causative constructions. In particular, why are causative constructions restricted to basically intransitive verbs? If causative constructions historically derive from serial verb constructions, and it seems likely that this is the case, then the constraint of one Actor and one Undergoer per construction provides the answer. A causer and a highly agentive Actor (such as manifested by multiple-place verbs) cannot co-occur in the same 'serial' construction since there is only one Actor marker with which to reference the Actor of the construction. The present constraints on causative constructions follow the same principle of forbidding doubling on agents in a clause, and it is likely that this principle derives from a common origin in serial constructions.

In the case frames discussed below, the Actor bears a role relationship with at least the first verb root. The Undergoer typically bears a role relationship with the second verb root, although it does not always do so. The verb classes referred to are those which are summarized on Table 102.

I. 1/2-place Predicates

Case Frame A



Case Frame A combines verb roots with coreferential Actors. If the Undergoer function is manifested, it must identify an Orientation which is coreferential for both roots.

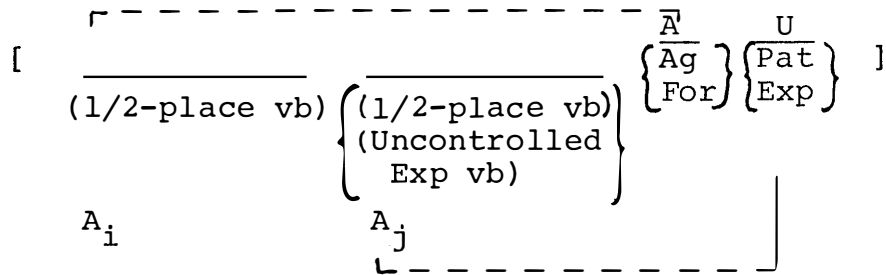
47.

Subj(Pat)	A
yën - r	hoe - toweh - r
child - 3SM	sleep-dream-3SM

'A child slept (and) dreamt.'

II. Two-place Predicates

Case Frame B

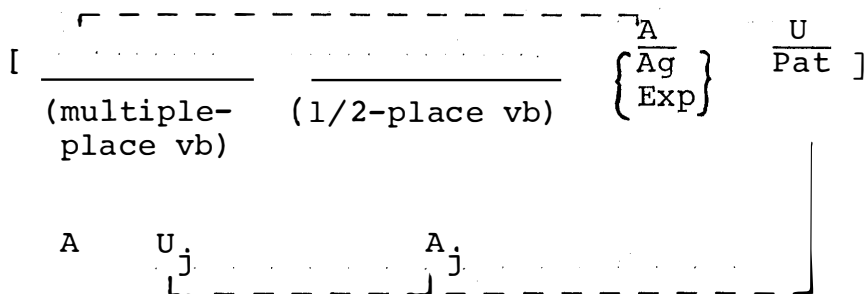


Case-frame B combines verb roots with non-identical Actors. This construction implies that an Actor of the second verb root maintains a low degree of control (i.e., is a weak Agent) and is thus viewed as the Undergoer of the construction. An action verb hosting an Agentive role and a Controlled Experiencer verb cannot, therefore, manifest the second verb root. The features of case-frame B are those of a Direct Causative construction (cf. the discussion in V.B.3.a.3)).

- 48(a). Subj(Pat) In.Obj(Pat) $\overline{\text{A}}$ $\overline{\text{U}}$
 yën - r met - t hoe - hip - r - t
 child-3SM woman-3SF sleep-perspire-3SM-3SF
 'A child slept (and) a woman perspired'
 (= 'A child slept in such a way as to cause a woman to perspire.')

- (b). Subj(Ag) In.Obj(Exp) $\overline{\text{A}}$ $\overline{\text{U}}$
 yën - r met - t siña - fëhtas-r - t
 child-3SM woman-3SF rise-start.at-3SM-3SF
 'A child rose (and) startled a woman.'

Case Frame C

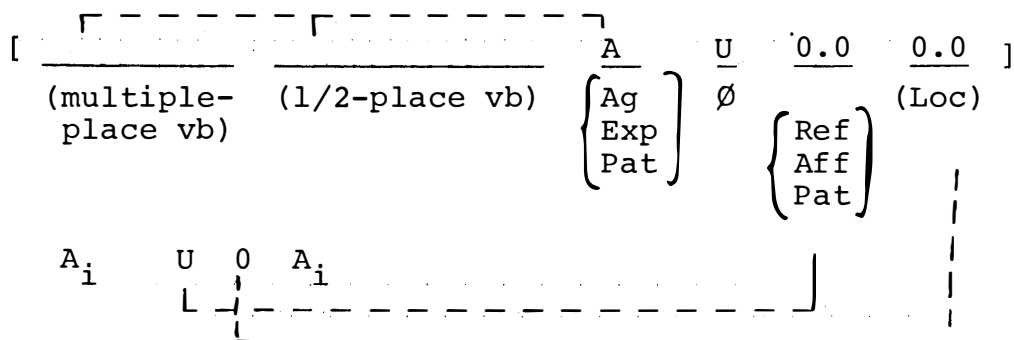


Case frame C combines a two- or three-place verb root with

a 1/2-place verb root with the Undergoer of the first coreferential with the Actor of the second. The relationship between the verb roots is, as in frame B, cause and effect; similarly, therefore, Action verbs and Controlled Experiencer verbs are restricted from the second position (cf. ungrammatical examples 49(b) and (c)).

- 49(a). $\overbrace{\text{In. Obj (Pat)}}^{\text{A U}}$
 yawy - r tat - noh - an - r
 dog - 3SM hit - die -- 1S-3SM
 'I hit a dog (and) (he) died.'
 (= 'I killed a dog by hitting him.')
- (b). $\overbrace{\text{Subj (Ag)}}^{\text{A U}}$ $\overbrace{\text{In. Obj (Pat-Ag)}}^{\text{A U}}$
 * na yawy- r tat - fakrmay - an - r
 1S dog-3SM hit-run.away - 1S-3SM
- (c). $\overbrace{\text{Subj (Ag)}}^{\text{A U}}$ $\overbrace{\text{In. Obj (Pat-Exp)}}^{\text{A U}}$
 * na yën-r tat - nur - an - r
 1S child hit - cry - 1S - 3SM

Case Frame D



Case frame D exhibits the same verb root configuration as frame C but it differs from case frame C in that the Actors of the two verb roots are coreferential. Theoretically, any combination of verb roots may occur since no doubling of Agents is possible, there being only one Agent. Case frame D exhibits a detransitivized form with no participant coreferenced as Undergoer (as in reflexive forms). This

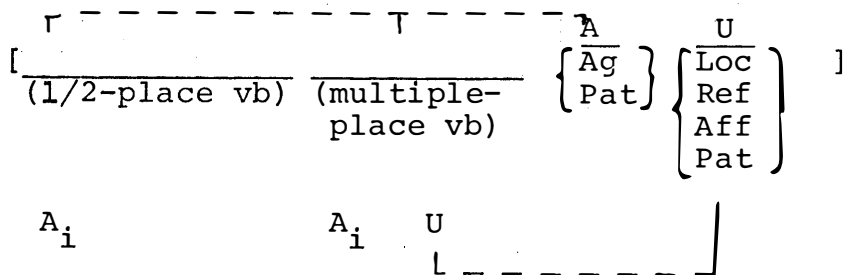
"reflexive" form is the means of encoding the fact that the Actors of the two verb roots are coreferential. In terms of transitivity, there is no transfer of activity between two participants. This construction may express simultaneity or sequence (with or without an implication of cause-and-effect).

50(a). $\left[\begin{array}{c} \text{Subj(Ag-Pat)} \quad \text{O.Obj(Loc)} \\ \text{yima - r} \quad \text{tek - t} \quad \text{yëhne - noh - më - r} \\ \text{person-3SM} \quad \text{river-3SF} \quad \text{go.down-die-R.PST-3SM} \end{array} \right] \underline{\text{A}}$
'A man went into the river (i.e., under water) (and) died.'

(b). $\left[\begin{array}{c} \text{Subj(Ag)} \quad \text{O.Obj(Loc)} \quad \text{O.Obj(Pat)} \\ \text{nëm} \quad \text{doh - t} \quad \text{wuska-m} \quad \text{mi - këmbray -ri-nëm} \\ \text{1PL} \quad \text{canoe-3SF} \quad \text{things-3PL} \quad \text{ELEV-put.into-go.N-1PL} \\ \text{.PST} \end{array} \right] \underline{\text{A}}$
'We filled (the) canoe (with) things (and) went.'

(c). $\left[\begin{array}{c} \text{Subj(Ag-Exp)} \quad \text{O.Obj(Pat)} \\ \text{yën - r} \quad \text{mimem - t} \quad \text{tat - nur - më - r} \\ \text{child-3SM} \quad \text{mother-3SF} \quad \text{hit-cry-R.PST-3SM} \end{array} \right] \underline{\text{A}}$
'A child hit (his) mother (and) cried.'

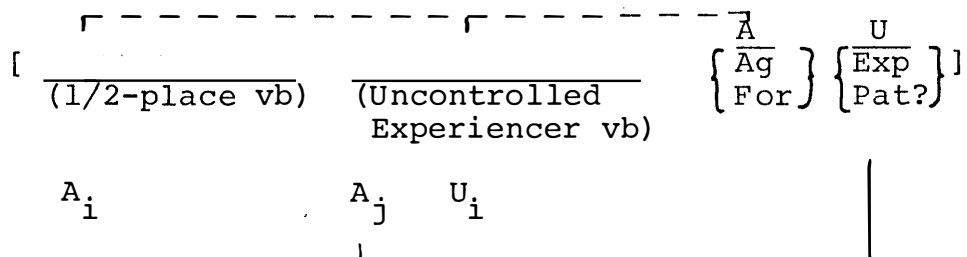
Case Frame E



Case frame E combines a 1/2-place verb root with a two- or three-place verb, with the Actors of the two roots being coreferential.

51. Subj(Ag) In.Obj(Pat) A U
 na yawy -r siña-tat -më - an - r
 1S dog-3SM rise-hit-R.PST-1S-3SM
 'I rose (and) hit a dog.'

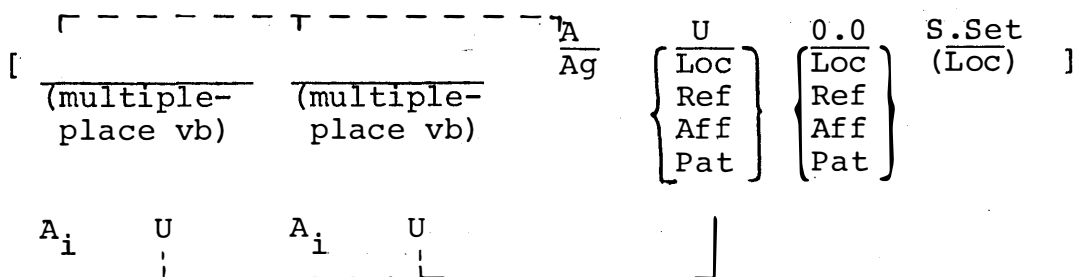
Case Frame F



Case frame F exhibits the same general verb root configuration as frame E, but they differ in that the Actor of the first root is coreferential with the Undergoer of the second root. This case frame implies a cause-and-effect relationship between the roots and is therefore restricted in much the same way that frames B and C are. The exemption of Controlled Experiencer verbs (i.e., 'laugh') from manifesting the effect in case frames B and C versus the presence of the Uncontrolled Experiencer verb root as the effect here in frame F further accentuates the contrast between these two verb classes (case frames 2 and 5 on Table 102), and the differences in the degree of agentivity of their Actors.

52. Subj(For) A U
 wifër-t fïr - fëhtas - t - a
 wind-3SF blow-start.at-3SF-1S
 'The wind blew (and) I (was) startled.'
 (= 'The wind startled me by its blowing.')

Case Frame G



Case frame G combines two 2- or 3-place verb roots, with the Actors of the two roots being coreferential. If the Undergoers of the two roots are not coreferential, either one may be coreferenced as the Undergoer of the construction. The semantic implications of the speaker's choice here are not clear (cf. the discussion on perspective in the next section for a possible explanation). Co-occurrence restrictions on roles are not indicated in case-frame G (or H). As a general constraint on clause structure, two participants in the Affective role or the same Locative role may not co-occur in the same clause.

- 53(a). Subj(Ag) In.Obj(Pat) A U
 met - t rit - m tandhi-hitay-t - m
 woman-3SF insect-3PL roast-put - 3SF-3PL

 kuñ - t - n
 house-3SF-S.SET
'A woman roasted (and) put the insects in a house.'

- (b). Subj(Ag) In.Obj(Ref) A U
 na rit - m muh - hambray - an - m miy - t - n
 1S insect-3PL climb-search.for-1S-3PL tree-3SF-S.SET
'I climbed a tree (and) looked for insects.'

In example (b), the Undergoer of muh 'climb' is encoded as a S.Setting (i.e., a Locative) NP. It may also occur in that construction with the clitic -e in place of the S.Setting marker -n, as in (c), or unmarked as in (d).

- (c). In.Obj(Loc) Out.Obj(Ref) A U
 miy - t - e ritm muh - hambray - an - t
 tree-3SF-SP insects climb-search.for-1S-3SF
'I climbed a tree (and) looked for insects.'

- (d). In.Obj(Loc) A U
 rit - m - e miy - t muh - hambray - an - t
 insect-3PL-SP tree-3SF climb-search.for-1S-3SF
'I climbed a tree (and) looked for insects.'

The -e suffix on 'tree' in example (c) and on 'insects' in example (d), is the same form as the second co-ordinate conjunction marker in a co-ordinate NP. It clearly does not signal a co-ordinate NP here, however, (cf. the description of the co-ordinate NP construction in IV.D.3). The -e suffix occurs on the first NP of juxtaposed Inner and Outer Objects (they may occur in either order). Either NP may be chosen as Undergoer on the verb (i.e., Inner Object), but the hearer will not know which NP is the Inner Object until it is indicated by the Undergoer pronominal marker on the verb. The -e suffix on the first of the two NP's in question acts as a signal to the hearer to suspend his processing (SP) of these NP's until their status in the clause is indicated on the verb. This pragmatic function parallels that of the subordinate marker of the same shape (-e after a consonant and -ne after a vowel) in the General Subordinate Clause which occurs in several sentence types (cf.VIII.C.).¹

¹Tannenhaus and Carroll (1975) discuss the clausal processing theory of speech perception, a theory which attempts to explain how a listener converts a stream of speech into a meaningful message. The clausal processing theory suggests that there are certain steps the listener goes through to accomplish his task. Briefly, a stream of speech is processed clause by clause (or by clause-like units). During the clause the listener formulates a hypothesis about the relationships between elements in the clause. At clause boundaries the clause is recoded in an abstract mental representation and the listener prepares for further processing.

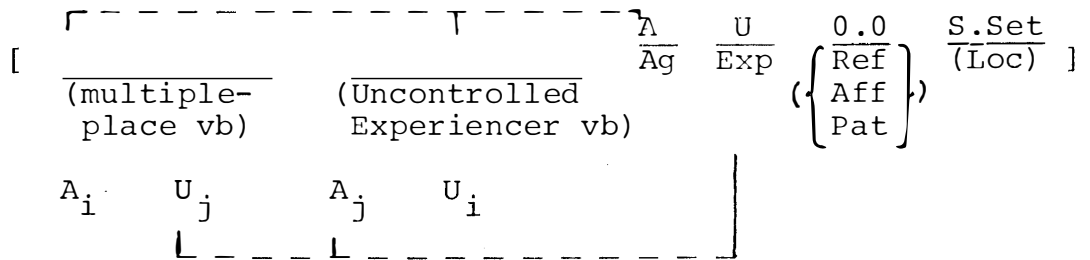
Tannenhaus and Carroll suggest that a hierarchy of clause types can be formulated which reflects variability in the recodability of types of clause constituents as processing units. Subordinate clauses, for example, are in some sense not recoded to the degree that main clauses are. As syntactic or phonological indicators of subordination are encountered by the listener he suspends a total recoding of the clause until the end of the next independent clause.

There are still many unanswered questions, such as what is precisely meant by a recoded abstract mental representation, and how many types of representation there might be. Assuming, however, that indicators of subordination at least warn the listener that he must incorporate what he is hearing into a larger unit beyond the clause he is taking in at the moment, then these same indicators may fulfill a similar function within the clausal unit. It is conceivable that in his process of building up a hypothesis about the internal relationships in the clause, he could be warned to suspend his normal process of clausal analysis until sometime later in the clause. The -e suffix seems to perform such a pragmatic function, relating to speech perception within and between clausal units.

The existence of a morpheme with a pragmatic function such as this is unusual. It is also strong evidence for the significance of the speaker's choice to encode a given NP as either Inner or Outer Object in clauses where two NP's may compete for the Inner Object status. This will be significant for the discussion of factors of referentiality and perspective in the next section.

The SP morpheme does not itself indicate which NP is the Inner Object, since it may occur on the Outer Object if the Outer Object precedes the Inner Object (cf. example 53(d)). Thus, the SP is not functioning as a topicalizer; if anything, the Undergoer marker on the verb is the topicalizer in these cases. The pragmatic marker (-e) in Alamlak only warns the hearer that he will have to wait to find out which of two NP's the speaker has in mind as being the more prominent.

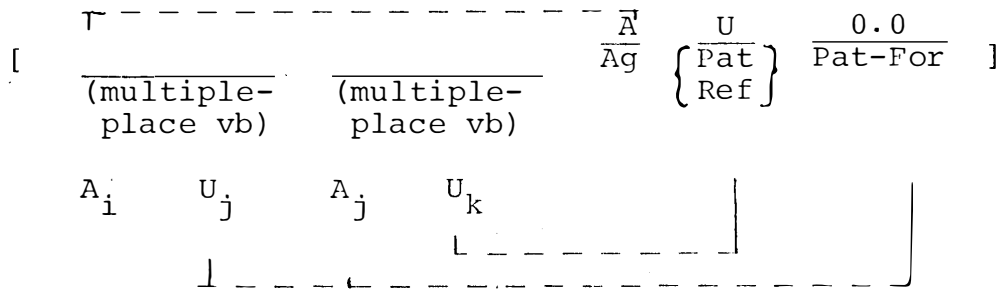
Case Frame H



Case frame H exhibits a similar verb root configuration as frame G, but with a different association of roles between the roots. The Actors of each root are coreferential with the Undergoers of the other root. Case frame H is the same as F with a multiple-place verb root in the first position. Thus, the verb roots have a cause-and-effect relationship to each other, and the second verb root position is restricted to roots which host Actors of low agentivity.

54. $\frac{\text{Subj (Ag)}}{\text{yën - r}}$ $\frac{\text{In.Obj (Aff-Exp)}}{\text{m+mem - t}}$ $\frac{A}{\text{hay - fëhtas - r - t}}$ $\frac{U}{\text{nandëm-r}}$
 child-3SM mother-3SF give-start.at-3SM-3SF snake-3SM
 'A child gave (his) mother a snake (causing) her to (be) startled.'
 (= 'A child startled his mother by giving her a snake.')

Case Frame I



Case frame I is similar to frame H in that the two Actors are not coreferential. The Undergoer of the first root is coreferential with the Actor of the second, an indication of the cause-and-effect relationship between the verb roots. The control on the types of Actors (only one highly agentive Actor is allowed) is not accomplished by constraining the exponents of the second verb root, but by constraining its Actors to those with a Force role. There is a third nuclear participant in this case frame, which is coreferenced as the Undergoer. The suspend processing (SP) morpheme which was discussed with case frame G, only optionally occurs with the Inner and Outer Objects here. While the speaker has no choice for his encoding of NP's as either Inner or Outer Object, the hearer is still confronted with two NP's for which he cannot determine a grammatical role until he at least hears the form of the serialized verb. Thus the SP morpheme is still a functional aid for the hearer.

55. Subj(Ag) O.Obj(Pat-For) In.Obj(Ref) A U
 na miy - t (-e) team - f foh -tat-an -f
 1S tree-3SF(-SP) coconut .palm -3D fell-hit-1S-3D
 'I felled a tree (causing it to) hit (two) coconut palms.'

3. SUBJECT: A CONFLATION OF ROLE, REFERENTIALITY AND PERSPECTIVE

The grammatical categories of Subject and Inner Object are generally coherent syntactic constructs in Alambalak syntax. There are a few constructions, however, which require these constructs to be analysed into component parts.

For the majority of clauses, a Subject NP can be identified by applying some of the more salient features of Subjects suggested by Keenan (1976). Basic subjects tend to be 1) the Agent or Causer of the clause if there is one, 2) the NP governing verb agreement, 3) the left-most of the nuclear NP's in the clause.

We can use the above features as a starting point to identify the Subject in Alambalak, thereby distinguishing it from the Inner Object NP. Agents and Causers are obligatorily coreferenced on the verb (with the exception of the derived 'middle voice' form of multiple-place verbs (cf. a discussion of voice in the clause in VI.B.4). It is always the first verb agreement marker that is employed to encode agents and, with the exception of Controlled Experiencer verbs, Causers alike. When there are no clearly agentive or causer NP's in the clause, the verb will coreference the most agentive NP with the first agreement marker (Actor). Most commonly, the first pronominal marker coreferences the left-most of the nuclear NP's. For these reasons, Alambalak has been classified as an SOV language (cf. VI.B.1).¹

The use of the constructs Subject and Inner Object is a recognition of the fact that the above features are more than chance correlations which characterize Alambalak clauses. We will now proceed to examine departures from the general pattern. We will do so to identify some of the features that are involved in establishing the correlation of subject features on one NP and to explain cases where these "subject" features diffuse to different NP's in a clause.

a. INALIENABLE POSSESSION: SPLITTING ROLE AND REFERENTIAL PROPERTIES

In certain clauses with two NP's, one of which is inalienably possessed by the other, role and reference properties are divided between the two phrases. The referentially prominent NP maintains a strict left-most

¹ The SOV analysis is verified by word order in subordinate clauses. Word order is more strict in subordinate clauses which do not identify the Actor and Undergoer by verbal suffixes. In these cases the Actor occurs leftmost. cf. section IX.D.

position and the second NP is marked (in the way that Subjects usually are marked) by the first pronominal marker as Force role, the most agentive of the two NP's.

56. $\overbrace{\text{RP NP (Pat)}}^{\text{yima - r}}$ $\overbrace{\text{Act (For)}}^{\text{ñuNgram - t}}$ $\overbrace{\text{A}}^{\text{kina - mē - t - r}}$
 person-3SM throat-3SF dry-R.PST-3SF-3SM
 'The man is dry $\left\{ \begin{array}{l} \text{(in)} \\ \text{(because of)} \end{array} \right\}$ (his) throat.'
 (= 'The man is thirsty.')

Example 57, although interpretable, is unacceptable due to the violation of the word order convention.

57. $\overbrace{\text{Subj (For)}}^{\text{ñuNgram - t}}$ $\overbrace{\text{A}}^{\text{yima - r}}$ $\overbrace{\text{A}}^{\text{kina - mē - t - r}}$
 * throat -3SF person-3SM dry-R.PST-3SF-3SM

The referentially prominent NP in 56 is like a 'Subject' by the word-order criterion, and the role prominent NP (i.e., the Actor as Force) is like a 'Subject' by the verb-agreement criterion (coreferenced by the first agreement marker on the verb). We therefore propose a syntactic construct termed Referentially Prominent NP,¹ to correspond to that NP which is Subject-like according to referential factors but lacks role features of typical Subjects. Such an NP is identified by word order in Alamblak.

There is evidence of the influence of referential factors on word order with other clauses, but the split of role and referential factors is most clearly portrayed in clauses involving inalienable possession. With these clauses the Role-Prominent NP (i.e., Actor) controls switch reference (ex. 58) but only the Referentially Prominent NP can be relativized on (ex.59).

¹This construct is virtually equivalent to Foley and Van Valin's (in prep. chapter six, p.6) Pragmatic Peak (PrP). Alternatively, Alan Walker (personal communication) has suggested the term Referential Peak for such constructs.

58. ┌-----┐
Actor (For) A
yima - r └─┘ kina - mē - t - t - r
person-3SM throat-3SF dry-R.PST-DA-3SF-3SM
- bupa - m fut - mē - A
r
water-3PL drink-R.PST-3SM
- 'A man was thirsty (because of his) throat [DIFFERENT ACTOR] (and) he drank water.'

In example 58 the first predicate is marked with the Different Actor suffix -t indicating a switch of actors from 'throat' in the first clause to 'man' in the second.

In example 59(a), the Referentially Prominent NP is relativized on, but in (b) the Actor NP cannot be relativized on.

- 59(a). ┌-----┐
GEN REL Clause
└─┘
RP
∅ tir - t fa - mē yima - r bupa - m
∅ hand-3SF ache-R.PST person-3SM water-3PL
- fut - mē - r
drink-R.PST-3SM
- 'A man (whose) hand ached drank water.'
- (b). ┌-----┐
GEN REL Clause
└─┘
Act
* ∅ ind yima - r fa - mē tir - t wa - hīti - n - t
∅ DEM person-3SM ache-R.PST hand-3SF IMPER-see-2S-3SF
- * 'Look at the hand (which) ached on the man.'

These constraints on relativization cannot be conveniently accounted for in terms of the NP Accessibility Hierarchy as formulated by Keenan and Comrie (1977), since Subject and Object NP's cannot be identified for these clauses. The constraints do concur with Schachter (1977) that the potentiality of relativization is a reference-related property of Subjects. All Subject NP's are referentially prominent (since they are all relativizable). Not all relativizable,

Referential structure does not override role structure in the ordering of NP's until the discontinuity of left-to-right order in the clause and top-to-bottom order of the animacy hierarchy reaches a relatively high degree. That is, if an Actor is very low on the hierarchy compared to a co-occurring Patient which is high on the hierarchy, then the NP higher on the animacy hierarchy (thus more naturally topical or referentially salient) will tend to precede the Actor NP in the clause. Thus, when an inanimate (and thus a non-agent) Actor NP co-occurs with a human Patient, then the preferred (though not strict) word order has the human Patient preceding the inanimate Actor, as in example 61.

61. $\overbrace{\text{RP (Pat)}}^{\text{---}} \quad \quad \quad \overbrace{\text{A}}^{\text{---}} \quad \overbrace{\text{U}}^{\text{---}}$
 yima - m bu-r wih - r - m
 person-3PL rain rain-3SM-3PL
'The rain rained on the men.'

There are other examples of the same type of phenomenon involving an inanimate NP which assumes the prominent role status but gives way to a referentially prominent human Patient NP in preferred word order.

62. $\overbrace{\text{RP (Aff)}}^{\text{---}} \quad \overbrace{\text{Act (For)}}^{\text{---}} \quad \quad \quad \overbrace{\text{A}}^{\text{---}} \quad \overbrace{\text{U}}^{\text{---}}$
 yima - m doh - t korhëy-w - t - m
 person-3PL canoe-3SF heavy-IMF - 3SF-3PL
'The canoe is heavy for the men.'

In the cases in examples 61 and 62, word order is a matter of preference only. Even though this constitutes only a weak argument for referential structure, preferences in ordering cannot be dismissed as completely trivial. In cases involving an inalienable possession relationship between the noun phrases, the ordering of constituents is strict (not merely a preference). Thus as in examples 56 and 57, the inalienable possession, although marked as Actor by coreference with the first verb agreement suffix, must follow the human Patient NP.

The data at hand does not allow us to make explicit claims about how finely grained the animacy hierarchy is which is operative in Alamlak, or which positions are differentiated for the purposes of assigning word order. The data do suggest, however, that inalienably-possessed inanimates is a distinct category below other inanimates, perhaps the lowest category on the hierarchy.

Space does not permit a full justification of postulating a Referentially-Prominent NP in the syntax which is distinct from a Topic NP (which maintains the Subject intact in the clause). Consider, however, sentence 61 (repeated here as example 63) with the first NP analysed as a Topic.

63. Topic Subj A U
 yima - m bu - r wih - r - m
 person-3PL rain-3SM rain-3SM-3PL
 * 'The men, the rain rained on them.'

The gloss for example 63 is starred since the topicalizing effect which it suggests in English is not present in Alamlak. Essentially the argument is that the word order in sentence 63 is a semantically unmarked order without special effects such as topicalization. It is not a variation of a more basic order with 'rain' preceding 'man', which in fact is the less preferred order. Furthermore, example 56, involving inalienable possession, is far from a variant word order giving OSV; it is in fact the only word order allowed, as demonstrated by example 57.¹ Finally, the first NP in example

¹ Example 63 illustrates a hypothesis which postulates a Topic which precedes a Subject in the clause. Another possible approach would postulate underlying and surface structures. By such an approach the underlying subject (=Actor) of example 61 has been demoted to Inner Object and the underlying Inner Object has been promoted to surface Subject (left-most NP). Such a solution would be more compatible with the analysis presented in section a, which would explicate the motivation for the postulated promotion. The main problem with the alternative, however, is that the notion of Subject is maintained; this obscures the fact that more than one surface NP exhibit so-called subject properties. To account for this fact, one property (agentivity) has been arbitrarily assigned to the underlying level

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63. Topic Subj A U
 yima - m bu - r wih - r - m
 person-3PL rain-3SM rain-3SM-3PL
 * 'The men, the rain rained on them.'

The gloss for example 63 is starred since the topicalizing effect which it suggests in English is not present in Alamlak. Essentially the argument is that the word order in sentence 63 is a semantically unmarked order without special effects such as topicalization. It is not a variation of a more basic order with 'rain' preceding 'man', which in fact is the less preferred order. Furthermore, example 56, involving inalienable possession, is far from a variant word order giving OSV; it is in fact the only word order allowed, as demonstrated by example 57.¹ Finally, the first NP in example

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63 does not exhibit typical features of Topics in most languages, e.g., it bears a semantic relation to the verb and is coreferenced by the verb (cf. Li and Thompson (1976:461-66) for a discussion of the features of Subjects and Topics).

To sum up, it has been suggested in this section that choices of word order are significant for the grammar of the clause. The left-most (nuclear) NP position is the position of prominence. Typically the Actor NP is the most prominent NP. Occasionally, however, referential prominence supersedes role prominence such as when an inanimate Actor is operating on a human Patient. Referential structure, though seen to play a minor role in Alambalak, is as integral a part of clause structure as role structure is.

b. COMITATIVE CONSTRUCTIONS: SPLITTING ROLE AND PERSPECTIVE

Clauses with Comitatives involve a perspective distinction between an independent noun and the Comitative-marked NP, whereas a role distinction is not made between them for the purposes of verb agreement.

This discussion will involve a comparison of co-ordinate NP's (IV.D.3) and Comitative NP's (VI.C.3).

The co-ordinate conjunction joins NP's in a single clause constituent illustrated in example 64.

(Cont'd)

and another (left-most NP) to the surface level. To argue that agentivity is the essential property of Subjects in "basic" (statistically more frequent) sentences is ad hoc since Subjects of such sentences are both agentive and referentially prominent. It would be at least as feasible to postulate the more referentially prominent NP to be the underlying subject. In that case, no promotion occurs in example 61 but promotion does occur in sentences like example 60 where the role prominence of the animate Agent supersedes the human Patient and is thus promoted to Subject from an underlying object position. There seems to be no principled way to decide which property would identify an underlying subject; this indeterminacy may suggest that the correct approach is to make the grammar sensitive to the more primitive features of Subjects rather than trying to accommodate a complex notion which is actually a conflation of role, reference, and perspective.

64. A
Subj (Ag)
yima - r - i yën - r yi - mē - f
person-3SF-CONJ child-3SM go-R.PST-3D
'A man and a boy went.'

The compound NP as a single constituent is coreferenced as subject by verb agreement, so that two singular NP's are coreferenced by the dual suffix in the verb.

At first glance the Comitative suffix -pnë would appear to conjoin NP's in the same way as the co-ordinate conjunction does, at least in some cases.

65. A
Act
yën - r yima - r -pnë yi - mē - f
child-3SM person-3SM-COM go-R.PST-3D
'A boy went with a man.'

As with example 64, the conjoined NP's in 65 are coreferenced in the verb by the third-person-dual pronominal suffix as if they formed a single constituent in subject position.

There are clear contrasts between examples 64 and 65, however. For example, Ross' (1967) Co-ordinate Structure Constraint (CSC) is applicable to sentence 64 but not to sentence 65. Neither of the NP's in sentence 64 may be relativized on (cf. example 66(a)), whereas the unmarked NP in example 65 may be (cf. example 66(b)).

- 66(a). GEN REL Clause
* Ø yima - r - i yi - mē yën - r .
Ø person-3SM-CONJ go-R.PST child-3SM
* 'The boy (who) and a man went.'

- (b). GEN REL Clause
Ø yima - r -pnë yi - mē yën - r
Ø person-3SM-COM go-R.PST child - 3SM
'The boy (who) went with a man.'

Furthermore, the Comitative NP (yima-r-pnë 'with the man') in example 65 cannot be relativized on (cf. example 67).

67. $\overbrace{\quad\quad\quad\text{GEN REL Clause}}^*$
 * $\overbrace{\emptyset \text{ yën} - r \text{ yi} - \text{më}}^*$ yima - r - pnë
 \emptyset child-3SM go-R.PST person-3SM-COM
 * 'The man with (whom) a boy went.'

The fact that, of examples 64 and 65, only the unmarked NP in 65 is relativizable suggests that the unmarked NP in 65 is singled out as being somehow in perspective.

Zubin (1976) uses relativization as a test for what the speaker is attentive of; that is, the head of a relative clause is what the speaker is talking about. Keenan and Bimson (1975:258) suggest that constraints on relativization are likely due to the difficulty of "making a ... NP 'topical', or independently referring ... relative to the structure it occurs in.", rather than being due to syntactic constraints, (e.g., constraints on movement rules). Foley (1977) relates the NP Accessibility Hierarchy (AH) to inherent topicality of NP's in various positions in grammatical constructions. Foley's position is essentially the same as Kuno's (1976:427) that the NP AH is, "a hierarchy for accessibility to thematic interpretation of noun phrases," In other words, NP's higher up on the hierarchy are more easily interpretable as thematic and therefore more easily relativizable than NP's lower down on the hierarchy.

If the views of Zubin, Keenan, Bimson, Foley and Kuno on relativization are valid, then relativization potentials in Alamlak will discriminate between more thematic and less thematic NP's (or NP's which are in perspective vs. those which are not, relative to other NP's in a given construction). On this basis neither NP in the co-ordinate structure (example 64) is more in perspective than the other since neither may be relativized. The unmarked NP in the comitative structure (example 65) is in perspective relative to the Comitative NP, however, since it may be relativized whereas the Comitative NP cannot be.

It is a curious fact, however, that the NP-plus-Comitative complex is coreferenced on the verb as if it were a single conjoined constituent even though it is not constrained by the CSC in the same way that the co-ordinate construction is. It is true that two animate NP's, one being marked as Comitative, are both Actors in the predication of the verb. As such, they are both coreferenced by the Actor verb agreement marker, the function of which is to indicate the semantic case roles of NP's in the clause. Both NP's are not equivalent in the speaker's perspective, however. It was hypothesized above that the unmarked NP (the one that may be relativized on) is in some sense "in perspective" (cf. Fillmore 1976, and 1977), and the Comitative NP is in some sense subordinate, or "out of perspective". This hypothesis is empirically verifiable by observable semantic effects in discourse (see discussion below pp. 393-96).

Here, as in the preceding section, the subject may be analysed into component features. By verb agreement, both NP's in example 65 are cumulatively coreferenced as Actors in the clause. By other criteria (e.g., relativizability) the unmarked NP appears to be in "perspective" relative to the Comitative NP.

A language-independent definition of a notion such as "perspective" has not yet been reached, although it seems demonstrable that there is something operating which is not covered by other notions. Kuno (1976), for example, has described some syntactic reflexes of perspective, which he terms "empathy", but he has not provided for us a precise definition.

For Alambak we will attempt to give some evidence of what could be termed "empathy", "perspective", or "point of view". It remains to be seen whether or not certain syntactic properties of Subjects can be uniquely correlated with a notion of perspective like Schachter (1977) has attempted to do with referentiality and role. Some aspects of perspective seem to be related to a case-role type function and others to referential factors like 'given-new' contrasts.

The first Alambak examples to consider come from the

legendary narrative, "The person who turned into an animal". The narrative is too long to reproduce here, so the general context of the relevant examples is summarized as follows:

A man has an encounter with a bad spirit in his house. He slips away, carrying his dogs and a cache of food with him. The spirit, in the meantime, has found the man's scent and is gradually catching up to him. On three occasions the man leaves some of his dogs on the trail to fight the spirit while he himself tries to get away.

The spirit encounters the man's dogs three times and the story describes the encounters from two different perspectives.

The immediate context of the first encounter is as follows:

"The spirit followed, the man heard [him], being close by. Having put the string bag down, he [the man] fed and left some dogs. Having fed and left them, he [the man] went. The spirit came and saw the dogs ..."

68.

A
┌
└

Rër - pnë na - nayur - m
he - COM REC-fight - 3PL

'[They] with him they fought each other.'

The dogs are unspecified in sentence 68, so according to our discussion thus far, this sentence reports the first encounter with the dogs in perspective. (Although unspecified, the dogs are coreferenced by the Actor marker on the verb). The dogs are not the discourse topic, nor could they be considered a local topic in comparison to the spirit. Rather, the choice of perspective seems to be based on aspects of role in the situation. The dogs are viewed as the initiators, for they probably took the spirit somewhat by surprise on the trail.

The immediate context of the third encounter is as follows:

"The man left the dogs there and fed them; he climbed to the top of a tall tree. He sat in the very top. The spirit came; having come ..."

69. wurëh yawy-m- pnë na - nayur-m
 last dog-3PL-COM REC-fight-3PL
 '[He] with the last dogs they fought each other.'

The spirit is unspecified this time. By now the spirit is clearly in control and fully prepared for the fight with the dogs, having defeated the first two packs of dogs; presumably for this reason the fight is reported with the spirit in perspective.

It seems clear from other examples that it is not always a semantic role factor such as initiator or controller of an action which determines the perspective. Consider an example from an explanatory/hortatory text "House Repair" (a portion of a conversation).

The immediate context is as follows:

"If you go alone you might unnecessarily cut the trees too long. Wait, this afternoon ...

70. nan - n -pnë rihwa ^A -nëm - ne
 1S -EMPH-COM go.FUT-1PL-G.SUB
 '[You] with me, when we will have gone,'
 ... with a measurement the trees will be cut ..."

It is difficult to identify the relevant factors in sentence 70, and there is more than one analysis that could be made for the situation. The hearer (unspecified) in sentence 70 could be interpreted as a discourse Topic; for referential reasons the hearer is in perspective. This is a plausible analysis, given that the discourse genre is explanatory/hortatory.

Example 71 suggests that referential salience versus new information can be involved in the use of the Comitative. This sentence comes from a hunting story involving four boys. It comes text-medially after two birds were shot.

71.

A

në Natmah - pnë dbifr - wë-nën-f
 1D Natmah - COM pluck-IMPF-1D-3D
 'We (two) with Natmah, we (two) pluck them (two).'
 (= 'We, (I) with Natmah, pluck them.')

Sentence 71 may be analyzed as containing a Subject followed by an appositional phrase.¹ That the Comitative NP is appositional is evident by the Actor verb agreement marker which, in concord with the Subject, is dual in number. Natmah is a submember of the Subject pronoun 'we (two)', not a third participant in the clause. Since the speaker is identified as an Actor by the first word of the clause (we), he is not specified in the 'appositional' phrase which is included to clarify the identity of the participants. Semantically both actors must be of equivalent status in the action since the Subject of the sentence is në 'we(two)'. The reason for the choice of Comitative versus co-ordinate construction is simply that the Comitative is used to encode the new information. The speaker is "given" information, being in the consciousness of the hearer, and the proper name Natmah is "new" information, resolving a possible ambiguity in the mind of the hearer, since there are three other actors in the discourse. The co-ordinate construction could have been used, but it would have redundantly repeated the speaker, as in example 72.

¹ The NP structures in 71 are not equivalent in all respects to an NP plus appositional phrase as the notions are used in traditional grammar. There is no potential for pause, for example, before the Comitative NP. This suggests that the Comitative is neither an afterthought nor a non-restrictive adjunct. This type of structure is similar to the Composite Nominal Base (v. Table 50 in Chapter IV) in which one member of a composite is specified along with the composite.

This type of conflation of NP's (as in example 71) is not uncommon in natural language. Margaret Langdon (personal communication) has seen a similar structure in an Old Norse text. Harold Koch (personal communication) has observed the same type of structure in Australian languages. It is common in New Guinea Pidgin as well, without the Comitative marker e.g., mitupela mama (we.two.exclusive mother) 'We two mother' refers to two people, the speaker and his mother.

The co-ordinate NP in 72 is more like a traditional appositional phrase with a pause separating the two NP's.

72. nē, nan - i Natmah, dbifr -wē-nēn-f
 1D 1S -CONJ Natmah pluck-IMPF-1D-3D
 'We, I and Natmah pluck them.'

To leave one of the NP's unspecified in a co-ordinate construction is not allowed, as the CSC predicts, implicitly if not explicitly.

73. * nē Natmah - i dbifr-wē - nēn-f
 1D Natmah -CONJ pluck-IMPF-1D-3D
 * *'We and Natmah pluck them.'*

With the comitative structure, however, the unmarked NP may occur, or (as in example 71) it may be unspecified as an instance of zero anaphora.

In summary, several different factors have been tentatively suggested as being involved in the notion of perspective. These have included semantic factors such as initiation or control (examples 68 and 69), and referential factors such as discourse topicality (example 70) and new and old information (example 71).

The comitative use of the Referent (case) marker has been seen to relate two NP's together in a clause in a way which is distinct from the co-ordinate conjunction. If we conclude that the Referent marker functions as a case marker here as in its other manifestations, it could present problems for a principle proposed by certain proponents of Relational Grammar. Johnson (1977:157) follows Postal and Perlmutter's principle that oblique NP's do not trigger verb agreement.

The Alamlak case, however, need not be interpreted as an exception if the Referent marker in comitative function is analysed as something quite distinct from case-marking formatives. One possible analysis would classify the Comitative marker as a type of conjunction. Such a possibility would involve a close scrutiny of co-ordination and subordination. Bolinger (1977:22) has noted that "true semantic co-ordination is the exception rather than the rule -- one clause almost always toadies to the other in some sense".

Presumably what this means is that when NP's are conjoined syntactically it does not imply that the NP's are semantically equivalent in every respect. Ambiguities commonly discussed in this regard include the fact that in the sentence "John and Mary went to town" it is not clear when or how the two participants went to town. John and Mary may or may not have gone to town at the same time or by the same mode. The situation is similar to a metaphor, in which a limited set of points of comparison is intended, even when an Equational Clause syntactically relates two NP's.

It is possible, then, to analyze the Alamblak Comitative as a conjoining function which joins NP's which are equivalent in semantic case role but not equivalent in perspective. The other (co-ordinate) conjunction joins NP's which are equivalent both in role and perspective.

In conclusion, Alamblak is a role-dominant language. As such, role structure dominates clause structure; it is manifested primarily by verb agreement and secondarily by the word-order convention. Role structure is so dominant that the notion of Subject almost completely corresponds to Actor function.

Role identification does not correspond to the Subject in the case of Comitatives, however, simply because Alamblak emphasizes role structure to such a high degree. Thus, in spite of a perspective difference in comitative constructions, the role system encodes both NP's as Actors (and thus in some sense equivalent). In section a, we saw how referential structure overruled role structure in word order for a limited extent of Alamblak syntax.

At least three systems interact at the clause level: role, reference, and perspective. Where these systems operate together, the notion of Subject can be consistently used. Where they do not, the notion of Subject must be split into its primitive features.

Chapter VIII

SENTENCES

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Chapter VIII

SENTENCES

A. INTRODUCTION

The notion of sentence in Alambhak is defined by both its semantic and structural features. We adopt, as our starting point, Longacre's (1976:276) semantic definition of sentence as "a combination of predications." This distinguishes a sentence from a clause, which is the domain of a simple predication or proposition. Structurally, the sentence is composed of one or more predicates conjoined by one or more features of sentence cohesion. Linking intonational patterns (cf. footnote on page 411) and/or inter-clausal conjunctions are suggested as the cohesive features which are definitive of Alambhak sentences. Subordinating clitics and other subordinating features are common but non-distinctive cohesive features of sentences.

Sentences will not be contrasted with higher grammatical levels, such as paragraph, in this study, although Tagmemicists generally postulate two or more grammatical levels above the sentence. In Longacre's work, the higher levels are defined almost entirely semantically¹ and the structural differences seem to be little more than gradations of cohesiveness and size. The paragraph, for example, is characterized as generally "a looser and larger package than the sentence." (Longacre 1976:276). Such a gradation is clearly evident in Alambhak, but any dividing point between paragraph and sentence, i.e., clauses or sentences with a relatively low degree of cohesion versus those with a high degree of cohesion, is largely arbitrary.²

¹Note from Longacre (1976:276): "The paragraph is the developmental unit of discourse. It is the typical unit of argumentation...exhortation... explanation...exposition...and of episode."

²Even if further research motivates higher grammatical levels in Alambhak, a fusion of borders between levels of sentence and paragraph would not be contrary either with a Tagmemic theory or with structural systems at other levels in Alambhak syntax.

In this chapter Alambalak sentences are described in terms of their structural form and the semantic relationships which relate two or more clauses. Semantic relationships between clauses will include logical relations and discourse features of information flow (e.g., Communicative Dynamism, new and old information, foregrounding, and backgrounding).

B. THE SEMANTICS OF SENTENCES

The semantic structure of sentences involves at least two aspects: the logical relations between the clauses and the relationships between clauses in terms of discourse factors.

The system of logical relations between clauses used here is adapted with little alteration from Longacre's (1976:98-164) expanded statement calculus. Longacre sees a primary division between basic and elaborated types which are further subdivided into sequential and non-sequential. The overall system of types of logical relations between clauses is presented in Table 104. Aspects of each of these semantic relationships are discussed briefly in the next few pages.

Table 104: Longacre's (1976:159) Semantic System of Sentences

Statement Calculus							
basic				elaborated			
non-sequential		sequential		non-sequential		sequential	
a	b	a	b	a	b	a	b
conjoining	alternation	temporal	implication	paraphrase	illustration	deixis	attribution

a = intra-situational, realis

b = extra-situational (extrapolation), irrealis

1. CONJOINING

The semantic relationship of conjoining includes coupling, contrast, and comparison.

Coupling is a very general notion which subsumes other notions such as temporal succession, which in turn subsumes certain cause-effect relationships. Coupling is not restricted to conjoining temporally related events, however, and to avoid overlap in semantic analysis, Longacre uses coupling to designate non-temporal and-relations.

Longacre reserves the term 'contrast' for cases involving two pairs of contrast. The predicates of two clauses may contrast and one term may contrast between the predications, or two outer terms may contrast (e.g., "Bill works outdoors during the day and indoors at night" (Longacre, 1976:106). The notion of exception is included here where the contrasted terms are 1), the universal set minus one member, and 2) the excluded member of that set. Longacre does not distinguish between antithetical and complementary contrast which seems to be the import of the difference between examples 1(a) and (b).

1(a). The man went to town during the flood but his wife stayed home.

(b). He goes by road during high water time and by river during low water time.

Comparison is a relationship which associates two predicates in terms of the similarity or difference by degree between their terms, e.g., X is the same or greater or lesser P than Y is P.

2. ALTERNATION

Propositions may be alternatives. The opposition may either be binary (with two possible alternatives) or multiple.

3. TEMPORAL

Temporal relationships between predications is an important features of human language. The two basic relationships here are simultaneity and succession.

4. IMPLICATION

Implicational relationships between predications involve logical rather than temporal organization, although the two are closely related. Implications are essentially logical interpretations imposed upon essentially temporally related predications. Four major types of implication are postulated: conditionality, causation, contrafactuality, and warning,

Subsumed under conditionality are hypotheticality, universal quantifier, contingency, and proportions. Hypotheticality "states a relation between an antecedent and a consequent, i.e., the consequent does not follow unless the condition stated in the antecedent also holds," (Longacre 1976:120). With hypotheticality, the speaker is non-committal about the likelihood of the fulfilment of the condition. The universal quantifier seems to be essentially the same relationship as hypotheticality with the further specification that an element of the antecedent embraces a universal set of a particular semantico-syntactic category (expressed in English by universal quantifiers like whenever, wherever, whoever, whatever, etc.). Contingency, while very similar to a simple temporal relation, is included to accommodate languages which have a distinct surface structure to encode a relationship of temporally related events, one of which is contingent upon another. With contingency, the speaker assumes that the prior event or state will eventuate, enabling the realization of the contingent event. The relationship of proportions is one involving correlative statements such as "the bigger they are, the harder they fall.

Subsumed under causation are efficient cause, final cause (purpose), and circumstantial causation. Longacre characterizes an efficient cause as the cause that pushes, i.e., with a perspective on the antecedent situation. Final cause (purpose), on the other hand, is the cause that pulls, i.e., with a perspective on the consequential situation. Circumstantial causation is weak causation which essentially expresses the same logical relation as expressed by efficient cause, differing only in the degree of causality between one situation and

another. Longacre may be reacting to differences between those causes which are the sole reasons for resulting situations (i.e., efficient cause), and circumstantial causes, which may be relatively insignificant or one of many extenuating circumstances contributing to a resulting situation. Note the similarity here with degrees of direct involvement of the causer and causee in analytic and synthetic causative constructions (cf. section V.B.3.a.3)),

Contrafactuality is a contingency involving a double implication. Hypotheticality is involved, as well, One implication states that one situation is contingent upon another. The second implication states that the hypothetical situation is not true, however, and therefore the contingency is not true, either. For example, "Had he come early, he would have gotten a seat" involves getting a seat being contingent on coming early; furthermore it implies that he didn't come early therefore he did not get a seat. Longacre does not mention here that the same value judgment is made for both constituents whether good, bad, or neutral. For example, "Had he come early [he did not and that is bad] he would have gotten a seat [so he did not and that is also bad]." Or, "Had he come late [he did not and that is good] he would not have seen the Queen [he did and that is also good]." We will see later that Alamlak sentence structure differentiates contrafactuals which imply negative value judgments from other types of contrafactuals (implying good or neutral, i.e., contextually determined, value judgments); see section C.1.b.5) in this chapter.

The final category of implicational relations is warning. This relation also clearly implies a certain value judgment in a situation. One predicate expresses an obligation to a course of action or presents it as highly desirable; the other predicate expresses an undesirable result of the (overtly expressed or implied) opposite hypothetical course of action. For example, "We should not walk through the swamp in the rain lest a snake bite us."

5. PARAPHRASE

Paraphrase is the first of the 'elaborative' and 'rhetorical' devices of discourse discussed by Longacre. He elucidates several types of paraphrase: equivalence, negated antonym, negated extremes, generic-specific, amplification, specific-generic, contraction, and summary. Paraphrase seems to be less clearly a relationship within a sentence than a function of the cohesion between sentences (or larger units) in the discourse. In paraphrase, one constituent is a restatement of another.

6. ILLUSTRATION

Illustration is an elaborative relationship utilizing simile and exemplification. Simile is the association whereby "two dissimilar things are paired by virtue of their possessing one point of similarity." (Longacre 1976:141) Exemplification involves one constituent illustrating another by way of example.

7. DEIXIS

The notion of deixis in a broad sense of the term is used by Longacre to refer to existential or equational predications. He distinguishes introduction whereby the existence of a participant is predicated and commented on, from identification whereby a participant is introduced and his function in the discourse identified. This type of 'discourse' deixis is more commonly a feature of discourse cohesion than it is the function of a particular sentence construction.

8. ATTRIBUTION

Attribution is an elaborative relationship between a speaker and what he speaks (speech attribution, i.e., direct and indirect quotation) and between a being and what he knows or thinks (awareness attribution).

9. FRUSTRATION

The last semantic parameter cross-cuts all of the others. Frustration, which we will refer to as contra-expectancy,

involves a frustration or counter expectation of "some sort of implication of collocational expectancy." (Longacre 1976: 149-50). The Antithetical Sentence in English, as in Alamlak, encodes most of the frustrated relationships between clauses.

It is in this context that Longacre (1976:151) discusses "expectancy chains" which "involve actions which customarily occur in sequence..." Longacre proposes that frustrated temporal succession e.g., "It fell down but it didn't break," is only appropriate where an expectancy chain is blocked, i.e., a presupposition associated with a prior statement is contradicted in a following statement. We have already found that such a notion as "expectancy chain" is important in the analysis of serial verb constructions (Chapter V), where only commonly associated predicates are allowed to combine.

The logical relations suggested by Longacre and discussed above forms the basis for describing one of the semantic systems in operation within sentences in Alamlak. The other system which is referred to is much more difficult to explicate in an objective way. This will be a 'functional' approach to the sentence and discourse, which though broad and ill-defined in many ways, does seem to provide meaningful insights into the internal organization of sentences.

Among the many linguists who have written under the rubric of functionalism, the work of the Prague school is one of the most established and well developed. Within this school of linguistics, several notions commonly used elsewhere (although not always in the same sense) are related to the functional Sentence Perspective. Some of these notions include theme, old information, and new unknown information. Firbas attempts to identify a more general system which he calls Communicative Dynamism (CD). He views the sentence as being structured by a distribution of CD. He states, "by the degree of CD carried by a sentence element we understand the extent to which the sentence element contributes to the development of the communication, to which it 'pushes the communication forward,' as it were." (Firbas 1964:270). CD seems to be a product of differing communicative values for different types of lexical material; thus it is possible to change the distribution of CD

by changing word order. As Firbas notes for Czeq, however, this can be done only with accompanying effects of emotive colouring.

The most general identification of lexical material with high CD is lexical material expressing new information (information not previously encountered in the discourse nor known by the context or extra-linguistic convention). Most commonly, the degree of Communicative Dynamism increases in the sentence from start to finish. It follows, then, that new information tends to occur toward the end of a sentence, and old, known information toward the beginning; that is one of the most widely agreed-upon assertions of the functional approach to syntax. High and low CD are not to be equated wholly with new and known information, however. Firbas proposes that even in sentences composed entirely of new information, the degrees of CD are not the same throughout the utterance. Without further defining the notion of CD, he simply labels the sentence element (or elements) which carry the lowest degree(s) of CD as the 'theme' of the sentence.

While Firbas does not quite succeed in providing us with a rigorous definition of Communicative Dynamism, he is claiming to describe an intuition about sentences common to Mathesius (1939), Travnicek (1962), and himself in a more adequate way than was previously done. It would appear that many other linguists possess similar intuitions expressible by such notions as backgrounding and foregrounding (Grimes 1975:55ff), focus of interest (Zubin 1976), and focus of attention (Miller and Johnson-Laird 1976:139).

For our purposes we will define some of these notions as follows:

New information: that which the speaker assumes he is introducing, by what he says, into the addressee's selective attention.

New information is not to be restricted to the introduction of participants into a discourse, but it may include information about the roles of participants in the discourse as well.

Old information: that which the speaker assumes to be in the addressee's selective attention at the time the sentence is spoken.

These definitions are the same as those in Chafe (1976:30,54) with the alteration of "selective attention" being substituted for Chafe's "consciousness". By these definitions some of what Firbas includes as old, known information (i.e., that which is predictable from the context) may be considered to be new information. Such predictable information would still have a relatively low degree of CD in Firbas' terms.

We will argue that for purposes of communication in a discourse, elements of new information may be differentiated with respect to CD, even as Firbas allows. The semantic factor of backgrounding is one such means of varying the CD across elements conveying new information.

Background information: "secondary information that is used to clarify a narrative" (Grimes 1975:56), or supportive information which centers the attention on other information in the discourse.

As secondary information which clarifies a narrative, Grimes includes unspecified premises, flashback, foreshadowing, and sometimes other events which are not removed from the main time of the narrative as are flashback and foreshadowing. A premise may be left unstated if it is highly predictable information which the speaker feels can be left unsaid without suffering a breakdown of communication. A stated premise will be included here as background information as well, since it leads up to and centers the focus of attention on the conclusion. For example, certain premises of Conditional, Contra-expectancy, and Contrafactual Sentences, viz., Nonfinal and General Subordinate Clauses, are subordinated with the same 'Presupposition form of the verb that subordinates General Relative Clauses (cf. section V.B.1.c.). Whatever the precise function of the 'Presupposition' marker, it seems clear that it typically marks backgrounded information in discourse, including the premises of the sentence types mentioned above.

In our discussion of Alambhak sentences, we will attempt to demonstrate a general relationship between types of clauses and some of these features of Communicative Dynamism. Specifically, there is a tendency for degrees of cohesion between the clauses to be correlated with the degree of balance in the distribution of CD among the clauses. A loose construction (with low cohesion) tends toward a co-ordinate relationship in which new information is presented in both clauses. A construction with high cohesion between the clauses tends toward a subordinate relationship in which old information or backgrounded new information is presented alongside new information. This correlation is similar to Thompson and Longacre's (to appear, p. 2) semantic characterization of subordinate clauses: "a subordinate clause is one which is presupposed, in the straightforward sense that the proposition it contains must be taken as given in order for the main proposition to be used felicitously."

C. SYNTAX OF SENTENCES

Taking the semantic and syntactic features discussed in the last section, Alambhak sentences may be organized into a system as represented in Table 105. The notions of co-ordination and subordination are semantico-syntactic notions reflecting different types of nexus between clauses. The semantic features which are employed include new and old information, and backgrounded information, as well as logical relationships between clauses which are reflected in the labels given to various sentence types.

The organization of sentences in Table 105 is a rough one at best. The division between sentences with low and high cohesion is an arbitrary one which only generally correlates with a homogeneous and heterogeneous distribution of Communicative Dynamism between the constituent clauses. As Conrad (1973:41) observes, "The distinction between tight and loose sentences has been made by Longacre in a number of languages with varying degrees of success."¹

¹Conrad uses this parameter, nevertheless, in his description of Mount Arapesh sentences, since it seems to work better than any other way he has found to demonstrate the relationships between the sentences of the language.

Antithetical and Conditional Sentences can be classified under both co-ordination and subordination, depending on different co-occurrences of constituent clauses. They have been placed on the chart according to their most distinctive pattern.

Table 105: Typology of Sentences

	Low Cohesion (equal CD in clauses)	High Cohesion (differentiation of CD in clauses)
<u>Types of Nexus</u>		
I. Co-ordination		
A. Independent Clauses	Antithetical S	
B. Mutually Dependent Clauses	Contrast S Comparative S	Summary S Conditional S Contra-expectancy S Contrafactual S Simile S
II. Subordination	Paraphrase S Quotation S Alternative Question S Loosely Conjoined S	Tightly Conjoined S Reason S

The notions of co-ordination and subordination, which have been employed in Table 105, are defined here according to their use in describing Alamblak sentences.

Co-ordination: "A co-ordination is a construction consisting of two or more members which are equivalent as to grammatical function, and bound together at the same level of structural hierarchy." (Dik 1968:25)

Clauses which are equivalent in grammatical function may be either both independent or both dependent. Co-ordinated

independent clauses both present new information and are joined with a low degree of cohesion. Mutually dependent clauses may be joined with low cohesion (and both present new information) or with a high degree of cohesion (in which case a premise presents backgrounded new information and a conclusion presents new information).

Subordination is given a very general definition in terms of structural and phonological dependency which will cover a range of language-specific means of encoding dependencies between clauses.

Subordination: The joining of two or more clauses one of which is independent and the others dependent upon it, i.e., they are unable to stand in isolation as single clauses, but they are not embedded within the independent clause as constituents of it.

Alamblak clauses are subordinated by one of several subordinating intonational patterns;¹ they may optionally manifest a subordinating clitic; the predicate may manifest a non-finite verb form, with or without Actor pronominal reference marking; and the clause may in other ways be

¹There are three types of subordinating intonational junctures and one linking pattern which is internal to each of two conjoined clauses. The feature of potential pause is common to each pattern at the end border of the subordinate clause. The three patterns may be characterized as level with obligatory pause, rising, and rising with step down to low pitch with optional glottal closure after lengthening of the vowel of the subordinating clitic. These patterns have been discussed in section II.F.

The internal linking pattern occurs with both clauses of the Comparative Sentence. This pattern may be analysed as a topicalization pattern. The NP's which are compared occur initially in each clause and are enunciated with a rising pitch followed by a final intonational pattern over the rest of the clause. This so-called topicalization pattern is the same as a subordinating intonational pattern on clauses. Johnston (1978:282) describes all subordinate clauses in Nakanai as topicalized elements of the sentence by analogy with topicalization strategies on NP's. The parallel between topicalization and subordination is evident in Alamblak as well, although topicalization only infrequently occurs in Alamblak.

morphologically non-isolatable as a minimal sentence. These subordinating features may be present in varying amounts in different subordinate clauses. Sentence types are arranged according to their degree of internal cohesiveness in Table 106.

As has been mentioned in the last section, there is a general correlation between the degree of dependency, or structural cohesion within a given sentence type, and the distribution of Communicative Dynamism within the sentence. The sentences with low cohesiveness (i.e., manifesting clauses of a relatively higher degree of independence) tend to include new information in both clauses. The sentences with high cohesiveness (with a greater degree of dependency between the clauses) tend to background or recapitulate some information in one or more dependent clauses and to utilize one clause to "push the communication forward" with new information.

Thompson and Longacre (forthcoming, p.2) have characterized subordinate clauses quite differently in some ways. They state, "Syntactically, a subordinate clause is simply a sentential expansion of a nominal, adjectival, or adverbial slot in the main clause." In this treatment of Alamblak, clauses which function as constituents of other clauses are termed "embedded clauses", whereas subordinate clauses are constituents of sentences. Embedded clauses are syntactically and phonologically bound more tightly to the main predicate of the clause than subordinate clauses are to the predicate of the independent clause. Other differences between subordinate and embedded clauses are discussed in Chapter IX.

While Thompson and Longacre indicate that subordinate clauses are marked as dependent in some way, they do not allow for phonological marking of that dependency. In the present work, intonation is given a prominent place as a mark of dependency. While intonation is not a syntactic marker, it is not usefully distinguished from syntactic markings of dependency in a functional approach to sentences. For example, clauses which are marked as dependent only by intonation function in the same way that syntactically (as well as intonationally) marked dependent clauses function. Embedded clauses, which function quite differently, are not characterized by the intonational pattern that is found on subordinate clauses

(cf. the discussion of the Purpose Clause in section IX.C.2.) even though they share some of the syntactic features of subordinate clauses.

Furthermore, Thompson and Longacre have restricted the notion of subordinate clause to those clauses which exhibit the same illocutionary force as that of the main clause. "Whether or not a clause has independent illocutionary force can be taken as a universal criterion for its status as a semantic main or subordinate clause" (Thompson and Longacre, forthcoming p.3). This latter feature of subordinate clauses is not a part of our use of the notion here. On the contrary, its validity as a universal criterion will be seriously questioned by examples of Conditional Sentences which manifest a Hortative dependent clause and a Declarative independent clause (cf. p. 427, 428).

Table 106: Degrees of Sentence Cohesion

Sentences	Dependent Clauses	Subordinating intonation Morphologically non-isolatable as minimal S Clitic Conjunction Non-finite Mutual dependency NO Actor mkr. Presupposition mkr.	...Low Cohesion										
			Antithetical S		+I				+I	+			
			Contrast S	Nonfinal CL	+						+	?	
			Comparative S	Comparison CL	+						+		
			Paraphrase S	Negation CL	+					+I			
			Quotation S	Quotation CL	+	+							
			Loosely Conjoined S	Nonfinal CL	+								+
				G. Sub. CL	+	+			+				+
			Alternative Question S	Nonfinal CL	+						+	?	
			Summary S	Nonfinal CL	+							+	?
				G. Sub. CL	+	+			+			+	+
				Truncated CL	+	+					+	+	+
			Reason S	Reas. Sub. CL	+	+			+		?		
			Tightly Conj. S	Truncated CL	+	+					+	+	
			Conditional S	Nonfinal CL	+						+	+	?
				G. Sub. CL	+	+			+	+			?
				Sub. IMP/HOR CL	+	+			+	+	+	+	
			Contrafactual S	Nonfinal CL	+						+	+	?
				Sub. Hort. CL	+	+			+	+		+	
Irrealis CL	+	+				+		+	+				
Contra-expectancy S	Sub. Hort. CL	+	+			+	+	+	+				
	Simultaneous CL	+	+			+		+	+				
	Sequence CL	+	+			+		+	+				
Simile S	Infinitive COMP	+				+		+	+	+			
	Purpose CL		+			+		+	+				

We now proceed to describe and illustrate the basic sentence constructions in Alamlak. A full explication of co-occurrences of clauses and recursively embedded sentences has not been attempted here, such a formidable task is beyond the scope of this thesis and probably of negligible value.

1. CO-ORDINATION

Sentences with co-ordinately related clauses relate two or more independent or mutually dependent clauses.

a. CO-ORDINATE SENTENCES WITH INDEPENDENT CLAUSES:

THE ANTITHETICAL SENTENCE

The conjoined independent clauses in an Antithetical Sentence are considered to be independent because they lack all of the definitive cohesive features of dependent clause conjoining. The one feature which the Antithetical Sentence may share with sentences involving at least one dependent clause is the conjunction particle or particle complex. Unlike dependent clauses, however, two independent clauses of an Antithetical Sentence manifest sentence-final intonation and lack other subordinating features (clitics, Presupposition marker, reduced verb forms, etc.) common to the dependent clauses of other sentence types.

Table 107: Antithetical Sentence

Functions:	+ Base ₁	+ Link	+ Base ₂
intonation:	Falling/Non-falling	Falling	Falling
exponents:	Indep. Clause	(to) nhay 'but no'	Indep. Clause
	Quotation S (and most other S types)	to tfit 'but''then'	
	Nonfinal Clause		
	G. Sub. CL		

Logical relations: counter expectancy in coupling, temporal succession, and simultaneity, alternation, efficient cause, purpose, and intent

The semantic cohesion between the two bases of the Antithetical Sentence involves the second base blocking an implication of the first base whereby an 'expectancy chain' is frustrated. The conflicting clause in base two must bear a close enough association with the 'expected', or commonly associated event, so as to be recognizably contrasting with the expected predicate.

2. Base₁ Independent Clause
 yifi - a yima - r - ho hīti - t;¹
 go. - 1S person-3SM-GEN see -INF
- Link: to nhai;
 but no
- Base₂ fiñji hīti - r - fë - an - r.
 NEG see -IRR-I.PST- 1S-3SM

'I went to see the man; but no; I did not see him.'

Example 3(a) illustrates an unacceptable sentence which is too elliptical to encode as a counter-expectancy and therefore would have to be encoded as a Conjoined Sentence (e.g., as in example 3(b)).

- 3(a). Base₁ * yifi - a këmbu - hajoh - t;
 go.I.PST-1S possum- hunt - INF
- Link: to nhai;
 but no
- Base₂ kish - t rim - krupiskiek - t.
 torch-3SF ELEV- extinguish -3SF

(b). (Loosely Conjoined Sentence)

Dependent base: yifi - a këmbu - hajoh - t - e,
 go.I.PST-1S possum - hunt - INF-G.SUB

Independent base: kish - t rim - krupiskiek - t.
 torch-3SF ELEV -extinguish-3SF

'I went to hunt possum, and the torch went out.'

¹The following orthographic conventions are used to indicate intonation: the three suspensive (subordinating) patterns are marked by a comma (,); a sentence-medial falling intonation is marked with a semi-colon (;); and a

Constituent Clauses of the Antithetical Sentence

The following variations of the basic pattern shown in Table 107 are of a subordinating rather than a co-ordinating type of pattern. A Quotation Sentence (cf. Table 126) manifesting base one optionally occurs with the subordinating clitic *-ne*, although the intonational pitch remains as a falling pitch instead of the rise-with-step-down pattern associated with the clitic elsewhere. A copulative clause in base one occurs with a rising pitch and the remainder of the sentence is as in Table 107. Two other dependent clauses, the Nonfinal Clause and the General Subordinate Clause, may manifest the first base.

Nonfinal Clause

Structurally, the Nonfinal Clause is nearly the same as an independent clause, but it differs by the potential of its verb to host the Different-Actor switch reference marker (cf. section IX.E.), and the Presupposition marker (cf. section V.B.1.c.), and by its suspensive level or rising intonation. It occurs in the Antithetical sentence without the Presupposition marker manifested in the verb. Where the Presupposition marker is manifested in the predicate of the Nonfinal clause, it is not restricted as it is in independent clauses (i.e., restricted to occurring either in Content Interrogative Clauses or with imperfective irrealis forms). Elevational affixes have not been observed in a Nonfinal clause. If they in fact cannot occur, it is a further indication of the backgrounded role of the Nonfinal subordinate clause within the sentence.

Table 108: VP of the Nonfinal Clause

Functions:	+ Nucleus	± Switch Reference	+ Termination
intonation:	level/rising		
exponents:	VP Base	-t 'different actor'	<u>Act</u> <u>Und</u> <u>Elev?</u> (PNG mkrs) (ELEV mkrs?)

An example of the Nonfinal Clause manifesting base one of the Antithetical Sentence is given in example 4 below. Other examples of the Nonfinal Clause are given in examples 5, 12, 17, and elsewhere in this chapter.

4. Base₁: Nonfinal Clause
 bro ñiñt yënr hoi - t - t - r,
 big centipede child sting-DA-3SF-3SM

Link: to nhai;
 but no

Base₂: fiñji noh - r - fë - r
 NEG die-IRR-I.PST-3SM

'A big centipede stung a child (DIFFERENT ACTOR), but no;
 he did not die.'

General Subordinate Clause

The General Subordinate Clause is a clause whose predicate manifests the subordinating clitic -ne and optionally the Presupposition marker. The verb forms which manifest the predicate are presented in Table 109.

Table 109: /-ne/ - Subordinated VP

Functions:	+ Nucleus	± Switch Reference	+ Actor Term.	+ Subordinator
intonation				rising-step-down
exponents	indicative verb base (Non) POSSD verb base (v. Tab. 44 p..179) Copular VP (v. Tab. 74 p. 275)	-t 'different actor'	PNG	-ne 'and, then'

The Different Actor marker co-occurs only with an indicative verb base.

The subordinating clitic -ne has the following allomorphs:

$$\begin{array}{l} /-ne/ \rightarrow \sim -ne \sim -n \sim -e / \left\{ \begin{array}{l} r \\ m \end{array} \right\} \text{---} \\ \quad \quad \quad -ne \sim -n \quad \quad / \text{ elsewhere} \end{array}$$

The step-down intonational pattern with a sustained level low pitch only occurs when the vowel of the morpheme is manifested. This pattern can only occur clause-finally, so if the subordinate verb is not the last constituent of the clause, only the -n allomorph can be manifested.

As Table 109 indicates, the subordinating clitic does not co-occur with the Undergoer pronominal marker of a multi-place verb. The conditions which control the choice between expressing a multi-place verb as a Nonfinal clause (with the Undergoer marker manifested) or as a General Subordinate Clause (with the Undergoer not manifested, displaced, so to speak, by the subordinator) are not clear at this stage of research.

When the verbal (Non)Possessed Base manifests the predicate, the General Subordinated Clause expresses simultaneity with or without an implication of efficient cause. This usage is discussed in section IX.C.1. together with the discussion of the Simultaneous Clause.

b. MUTUALLY DEPENDENT CLAUSES

The clause constituents of Contrast Sentences, Comparative Sentences, Summary Sentences, Conditional Sentences, Contrafactual Sentences, Contra-expectancy Sentences, and Simile Sentences are co-ordinately related. Both clauses in these sentences are marked in some way as dependent on each other and thus have an equivalent status of dependency. These sentences may be grouped generally into those exhibiting a relatively low degree of cohesion and those with a relatively high degree of cohesion. The general correlation of the distribution of Communicative Dynamism with internal cohesiveness tends to apply here. The sentences with low internal cohesiveness between the clauses, Contrast S and Comparative S, present new information in both clauses and thus have a more uniform distribution of CD than the others.

1) CONTRAST SENTENCETable 110:

Functions	+ Base ₁	+ Base ₂
intonation	rising	falling
exponents	Nonfinal Clause	Contrastive Negation Clause

Logical relations: contrast of one term and the predicate by antonymy or negation.¹

5. Base₁: yima - r ginaf - m ki - hanit - wë - r - m,
 person-3SM grub- 3PL eat- PROG-IMPF -3SM-3PL

Base₂: yën - r nhai; fiñji ye' - kah - r.
 child-3SM no NEG eat-RP.IRR-3SM

'The man is eating grubs, (but) not the child; he is not eating (them).'

Constituent Clauses of the Contrast Sentence

Base₁ of the Contrast Sentence is manifested by a Nonfinal Clause (cf. Table 111). Base₂ is manifested by a Contrastive Negation Clause. A Contrastive Negation Clause is distinct from a negative clause. The negative clause has a single negation clause constituent (cf. Table 87, p.298) which is usually manifested by one of the negation particles other than nhai 'no'.

¹As noted on p. 402, Longacre associates two other logical relations with contrast, namely contrast of two outer terms and exception. There are no clear examples of the former type in the data at hand. The relationship of exception is expressed by an inter-sentential pattern in Alamlak with the first sentence including or implying the universal set and the following sentence manifesting a limiter construction (Copular verb or NP), being the statement of the exception, e.g.,

Jigrm noh - buga - më - m. Tĩmbengafi - rpa - r korh - wë - r,
 Jigrim die - all- R.PST-3PL Tĩmbẽngafi-limit-3SM sitting-IMPF-3SM

'The Jigrim (= Singri) people have all died. Only Timbangavir remains.'
(The Singri people have all died with the exception of Timbangavir.)

The Negation Clause exhibits a negative function slot manifested only by *nhai* 'no' which occurs in the periphery of a clause of either positive or negative polarity. A Contrastive Negation Clause with a negative polarity, then, manifests two similar function slots: a negative slot manifested by *nhai* 'no', and a negation slot manifested by one of the other negative particles.

Table 111: Contrastive Negation Clause

Functions	+ Topic	+ Negative	(other functions as for structures of independent finite clauses)
intonation	rising	falling	falling
exponents	NP	<i>nhai</i> 'no'	(other exponents as for independent finite clauses)

For an example of a Contrastive Negation Clause, see Base₂ of example 5. The Topic NP is the NP in contrast with a term in the clause of Base₁ in the Contrast S. The notion of topic as used here is merely a specially marked NP. The Topic NP in the Contrastive Negation Clause retains all of the syntactic properties of the NP in simple clauses which would encode the role of the "Topic" NP. For example, an agent is, like a subject, coreferenced on the verb as Actor. Unlike Topics in other languages, the NP or a copy of it may not reappear in the clause following the negative.

The predicate of the Contrastive Negation Clause is either a negation of the predicate in the first Base or a semantically contrasting one.

2) COMPARATIVE SENTENCETable 112

Functions	+ Base ₁	+ Base ₂
exponents	Comparison Clause	Comparison Clause

logical relations: Two clauses compare terms by contrasting a feature which differs in degree between the two.¹

6. Base₁: Base₂
 Yiriar, broer; Pianr, habhiener.
 Yiria, he.is.big Pian he.is.small
 'Yiria is bigger than Pian.'

Longacre (1976:110,111) argues that Papua New Guinean languages typically employ a single structure for the semantic relations of contrast and comparison (degree conjoining such as in example 6 above). In fact, he even suggests that the logical notion of non-equivalent comparison (a differing of a feature by degrees) may not be a part of the semantic structure of Papua New Guinean languages and that contrast is all that is expressed by a sentence such as example 6 above. Alambak seems to be a clear example of a Papua New Guinean language with contrasting sentence structures for comparison and contrast (cf. Table 110). In other words, the sentence in example 6 is not an ambiguous sentence which could express contrast or simple coupling as well as a comparison. It encodes only comparison. No claim is being made in sentence 6 that one person is big or small in a general way, but they are big or small only in relation to each other. Admittedly there is a similar basis for comparative statements like example 6 which specify non-conventional standards of comparison, and an absolute statement ('he is big') or contrast ('she is big but he is

¹The other logical relationship subsumed under comparison is comparison of equivalence whereby two terms are related as possessing a common feature to the same degree. This type of relationship is encoded on the clause level in Alambak with a Resemblance Phrase manifested in the periphery of an independent clause (cf. Table 80, p. 286).

small') which are appealing to some conventional standard against which the absolute judgment is made. Both types of expressions have components of contrast and comparison with a standard. Different surface structures, however, serve to differentiate the comparison based on non-conventional standards (Comparative S) from those based on conventional standards (Contrast S).

Constituent Clauses of the Comparative Sentence

Both Bases of the Comparative Sentence are manifested by the same clause type; it thus provides the clearest example of the co-ordination of mutually dependent clauses. Comparison Clauses are marked as dependent by their internal intonational pattern. As with the Contrastive Negation Clause where the contrasting NP was termed the "topic", the NP's whose referents are being compared are termed "topics" for similar reasons. In both cases, for example, the topic is separated from the rest of the clause intonationally.

Table 113: Comparison Clause

Functions	+ Topic (other functions as for structures of independent clauses)
intonation	rising falling
exponents	NP (other exponents as for independent clauses)

For an example of a Comparison Clause, see either base of the sentence in example 6.

The next set of sentence types to be considered exhibit a relatively higher degree of cohesion between their mutually dependent clauses. The difference in Communicative Dynamism between the clauses is also greater than the more homogeneous low cohesive sentences discussed above.

3) SUMMARY SENTENCETable 114

Functions	+ Base ₁ ⁿ	+ Base ₂
intonation	(nonfalling)	falling
exponents	Nonfinal CL General Subordinate CL Truncated CL	Summary Clause

logical relations: Summary paraphrase

Table 114 indicates that the intonational pattern associated with Base₁ is variable depending on the exponent of the base. Base₂, however, always exhibits a falling intonation.

A further restriction on the Summary S is that it must exhibit a minimum of two Base₁'s. Without that restriction, no summarization would be possible. The Summary Clause must be lexically constituted to make a summarizing reference to the elements being summarized in the previous clauses.

The Summary Clause in Base₂ has little or no CD. Its function is rather to provide consolidation in the discourse.

7. Base₁: General Subordinate CL
 iñgorf ha - tonit - w - a - r - ne,
 trucks CAUS-he.runs-IMPF-PRSUP-3SM-G.SUB

Base₁: Truncated CL
 kuñm hiñgna,
 houses build

Base₂: Summary CL
 iñd hos hiñgnaneff hiñgnaywr.
 DEM two works he.works.

'He drives trucks, (and) builds houses, he does these two (types of) work.'

Constituent Clauses of the Summary Sentence

Base₁ may be manifested by the following subordinate clauses;

a Nonfinal Clause (cf. p. 417), a General Subordinate Clause (cf. pp. 418 ff), or a Truncated Clause.

A Truncated Clause is a clause whose predicate exhibits a verb stem plus or minus any prefixal inflections. This clause is thus tenseless, aspectless (except for those aspectual roots which form part of the stem), and without Actor or Undergoer pronominal suffixes. It manifests a rising intonation. An example of a Truncated Clause is given in the second Base₁ in example 7.

The second base of the Summary Sentence is manifested by a Summary Clause.

Table 115: Summary Clause

Functions	+ Summary	(other functions as for structures of independent finite clauses)
intonation		falling
exponents	iñji iñji 'thus'	(other exponents as for independent finite clauses)
	ind-htet 'like that'	
	NP	

The NP manifesting the summary function position must anaphorically summarize the previous sequence of clauses.

4) CONDITIONAL SENTENCE

The second type of highly cohesive sentence with mutually dependent clauses is the Conditional Sentence. As with Contra-expectancy and Contrafactual Sentences, a premise is coupled with a conclusion with the optional aid of a linking particle. The Conditional Sentence may manifest either an independent or a dependent clause in its second base. Due to its semantic affinity to Contra-expectancy and Contrafactual Sentences, it has been included with them as a co-ordinate sentence, although it embraces both subordinating and mutual dependency relationships between its constituent clauses.

Table 116: Conditional Sentence

Functions	+ Base ₁	± Link	+ Base ₂
intonation	non-falling	non-falling	falling
exponents	Nonfinal CL	[rising]	independent CL
	G. Sub. CL	awi	Double Irrealis CL
	Subordinate	'wait'	
	Imperative/ Hortative CL	[level]	
		bit(n) 'then'	
		[level]	
		be 'enough, finish, okay'	

logical relations: hypotheticality and contingency. Any distinction between pure hypotheticality ('if') and contingency which is based merely on a temporal relationship (e.g., 'when') is only vaguely represented by the Conditional Sentence. That is, in most contexts the hearer cannot deduce how the speaker feels about the probability of₁ the stated premise by his use of the sentence type.¹

The link bit(n) 'then' has been observed postposed to Base₂. In that position it carries a low-level pitch following the falling pitch over the second clause. As Table 116 indicates, the linking conjunction is optional. The Subordinate Imperative/Hortative (IMP/HOR) Clause, furthermore, never occurs with a conjunction. Neither does it co-occur with the Double Irrealis Clause.

¹As noted in p. 403, Longacre associates the semantic relation of universal quantifier and the relationship he terms "proportions" with those of hypotheticality and contingency. The universal quantifier idea is encoded by the Simultaneous Clause. There seems to be no semantic structure in Alamlak which is equivalent to the notion of proportions, however.

Longacre (1976:123) categorizes this notion under conditionality, suggesting that a sentence such as "The bigger they are the harder they fall", implies the following set of conditional sentences: "If they are small they don't fall very hard; if they are medium-sized, they fall rather hard; if they are big they fall very hard." There is no compelling reason, however, why the underlying semantics

8. Base₁: G. Sub. CL.
 rër nayay - w - r - e,
 he come -IMPF -3SM-G.SUB

Link Base₂: Indep. CL.
 bit na nayay - rhw - a
 then I come - FUT - 1S

'If/when he comes, then I will come.'

Some manifestations of the Conditional Sentence are almost exactly the same as the Loosely Conjoined Sentence. Superficially, example 8 without its optional conjunction would be just such a case. A tense change from present to future in the two clauses in example 8, however, restricts the semantic interpretation to one of hypotheticality and thus contrasts with a Conjoined Sentence.

9. Base₁: Subordinate IMP/HOR CL
 a - naya - kah - t - t ,
 HORT-come - IRR - DA-3SF

Base₂: Independent CL
 tu-finah - rhw - an - t
 shoot - FUT - 1S -3SF

'Let it come, (and) if/when (it does) I will shoot it.'

Constituent Clauses of the Conditional Sentence

The Nonfinal Clause and General Subordinate Clause have been discussed previously (cf. Tables 108 and 109). The other

(cont.)

should be conditionality rather than that of comparison. The following set of sentences could equally well express the proportional meaning: "medium-sized ones fall harder than small ones, and big ones fall harder than medium-sized ones." For that reason, the author suggests that the notion of so-called Proportions may be nothing more than a condensed expression of comparison of degree. For Alablak, at least, it is the Comparative Sentence which would be used to express Longacre's Proportions, and the logical relation of comparison of features by differences of degree is all that is needed to provide an interpretation comparable to Longacre's notion of proportions. The additional semantic relationship of Proportions is not necessary in the Alablak system and may prove to be redundant in a universal semantic system, as well.

subordinate clause constituent of Base₁ is the Subordinate Imperative/Hortative Clause which may be analysed as a subtype of either the Nonfinal Clause or the General Subordinate Clause with a present tense form of the Irrealis Imperative or Hortative verb manifesting the predicate.

Table 117: Present Irrealis Imperative/Hortative VP Base

Functions	+ Mode ₁	+ Elev.	+ Head	+ Mode ₂
exponents	wa- 'imperative'	(Tab 69 p. 234)	verb stem	-kah 'present irrealis'
	a- 'hortative'			

The imperative and hortative prefixes occur with second-person and non-second-person Actors, respectively.

One more example of the Subordinate Imperative Hortative Clause in a Conditional Sentence is given here by way of illustration.

10. Base₁: Sub. IMP/HOR CL
 wa - i - kah - n - n kuñ - ko ,
 IMPER-go- IRR- 2S-G.SUB house-AL

Base₂: Indep. Imper. CL
 wa - hoay - twa - Ø
 IMPER-sleep - FUT -2S
 .IRR
 .IMP/HOR

'Go to the house (and) if/when (you do), sleep.'

The Subordinate Imperative/Hortative Clause demands further discussion with regard to the nature of subordinate clauses. Thompson and Longacre (f.c.) have suggested that subordinate clauses cannot manifest independent illocutionary force. The Subordinate Imperative/Hortative Clause, however, may be

subordinated to an independent clause with a different illocutionary force (cf. example 9). Examples like 9 are certainly unusual compared to the more common cases (e.g., 10) where the two clauses have the same illocutionary force; examples like 9 were verified as completely acceptable nonetheless, by more than one Alamblak speaker.

That the Subordinate Imperative/Hortative Clause is indeed a subordinate clause can be justified by other criteria of subordination. Most importantly, it cannot stand in isolation as a single clause.

11. * wa - i - kah - n¹
 IMPER-go-- IRR -2S

Semantically, the Subordinate Imperative/Hortative presents backgrounded new information. That is, it is a stated premise which "leads up to and centers the focus of attention on the conclusion" (cf. the discussion of background information in section B of this chapter). In Thompson and Longacre's terms (forthcoming p.2) it is "taken as given", which enables "the main proposition to be used felicitously."

The unusual thing about the Subordinate Imperative/Hortative in Alamblak is that it combines a sense of obligation (by the hortative prefix) with a sense of conditionality (by the irrealis suffix). This particular combination is not allowed in a single English clause. Thus, example 9 must be translated in English by a co-ordinate sentence (or two sentences) with the contingency subordinated to one of the independent clauses, e.g., 'Let it come and if/when it does, I will shoot it.' The combination of both features (obligation and conditionality) in a single clause in Alamblak allows for the change of illocutionary force from the dependent to the independent clause.

¹The independent Negative Imperative Clause has a different suffix (-wah) and a hortative rather than an imperative prefix, e.g.,

12. a - i - wah - n
 HORT-go- NEG -2S
 'Don't go!'

The Subordinate Imperative/Hortative Clause, then, is a counter-example to Thompson and Longacre's restriction on subordinate clauses regarding independent illocutionary force.

One more constituent clause of the Conditional Sentence is left to be discussed, viz. the Double Irrealis Clause which may manifest the second base of the sentence. The Double Irrealis is similar in form to a negative indicative clause with two restrictions: the Negative particle in the clause is only optional and is the so-called 'Negative of Uncertainty' (afë);¹ secondly, the predicate is manifested by a Double Irrealis verb.

Table 118: Double Irrealis Verb

Func	± Elev	+ Head	+ Mode ₂	+ Tense	+ Mode ₃	+ Actor Term.	± Undergoer Term.
exp	(v. Tab 69)	verb stem	-r (Past Irrealis)	(v. Tab 59)	-t (Fut Irrealis)	PNG markers	PNG markers

By combining the Negative particle of uncertainty (afë) and the Future Irrealis (-t) with a Past Irrealis and Past tense, the clause becomes a negative statement about an unconfirmed or hypothetical past situation. While any past tense may occur, the Immediate Past tense may be extended with reference to any time in the past. This use would best be analysed as an extended use of the Immediate Past tense as a Perfect Tense-Aspect marker.²

An example of a Conditional Sentence manifesting a Double Irrealis Clause in its second base is given below.

¹The negative of uncertainty normally occurs with future tense forms of the predicate. It is not so restricted with the Double Irrealis Clause.

²Comrie (1976a: 60,61) discusses the natural affinity of perfect aspect and recent past time reference.

13. Base₁: Nonfinal CL
 tefi maruham hay - mē - m - r ,
 small money give-R.PST-3PL-3SM
 .amount

Link Base₂: Double Irrealis CL
 be , bēk wuskam afē wikna - r - fē - t - r - m.
 finish plenty things uncer buy - IRR-I.PST-IRR-3SM-3PL
 .neg

'If they gave him a small amount of money, well, he would not have bought plenty of things.'

5) CONTRAFACTUAL SENTENCE

Table 119: Contrafactual Sentence

Func	+ Base ₁	± Link	+ Base ₂
inton	nonfalling	nonfalling	falling
exp	Subordinate HORT CL	awi 'wait'	Irrealis CL [positive] Double Irrealis CL
	Nonfinal CL	bit(n) 'then'	
	Irrealis CL [negative]		

logical relations: Contrafactuality.¹

The Alambak Contrafactual Sentence has the following features: Base₁ expresses the contrafactual hypothetical premise and Base₂ the contrafactual hypothetical conclusion. The factual state of affairs (the opposite of what is stated) is implicit in both clauses. An implication of the sentence as a whole is that the

¹Longacre (1976) discusses "warning" as a semantic relation within the more general "Implicational" relationships. Warning as a relationship between clauses is expressed inter-sententially in Alambak, rather than by a single sentence type, e.g.,

14(a). waitwa tekko, Ninho yēnr yēhnirahr.
 go to.the.river your child he.will.go.down.into

'Go to the river. Your child will go down into (it).'
 (= Go to the river, lest your child fall in.)

(continued overleaf)

conclusion was to have been contingent upon the premise. The Subordinate Imperative/Hortative Clause (in Base₁) further expresses the notion of obligation; thus, the predications of both bases should have happened i.e., the speaker would have considered it desirable had they happened. Other exponents of the first base are neutral in this respect. Whether or not it would have been desirable for the predications to have happened is determined by the lexical content of the clauses and/or the context. In all cases the desirability of the conclusion is governed by the desirability of the premise.

The predicates in both clauses may be of positive or negative polarity and need not be the same. In the case of a negative clause, e.g., the negative Subordinate Hortative where the implication is that it did not but should have happened, a double negative situation results. In other words, as in example 15(c), had the Actor not hit her (Base₁) (he did not, not hit her however, but he should have not hit her), then he would have not gone to gaol (Base₂) (but in fact he did).

The time reference of the Contrafactual Sentence is before the time of the utterance. Two of the possible exponents of Base₁ are nonfinite with the precise tense of the sentence indicated by the clause manifesting Base₂.

15(a). Base₁: positive Subord. Hortative CL

a - i - kah - n - n

HORT-go-IRR- 2S -G.SUB

Link, Base₂: positive Irrealis CL

awi, hik - r - fë - an - n.

wait follow-IRR-I.PST-1S-2S

'You should have gone (and) if you had, well, I would have followed you (I wanted to).'

(cont.)

(b). mirahnëm †nd - ko añëm. Nandëmm wasrahnëm.
 we,will.say DEF-AL let's.go snakes they,will.bite.us
'We will say (but should not) 'let's go there,' Snakes will bite us,'
 (= Let us not go there, lest snakes bite us,)

- 15 (b). Base₁: positive Subord. Hortative CL
 a - yakrme - kah - f - n ,
 HORT-run.away- IRR- 3D-G.SUB

Link Base₂: Double Irrealis CL
 awi, afë was - r - mē - t - m - f.
 wait uncer pierce-IRR-R.PST-3PL-3D
 .neg

'They (two) should have run away (and) if they had, well, they would not have pierced them (two) [I did not want it to happen].'

- (c). Base₁: negative Subord. Hortative CL.
 a - tat - dohra - roh - kah - r - t ,
 HORT-hit-NONPOSSD-sitting- IRR -3SM-3SF

Base₂: Double Irrealis CL.
 afë yi - r - mē - t - r kalabus
 uncer go -IRR-R.PST-IRR-3SM gaol
 .neg

'He should not have hit her (and) if he had not, he would not have gone to gaol [I did not want him to].'

- (d). Base₁: negative Irrealis CL
 hoay - dohra - roh - kah - an - n ,
 sleep-NONPOSSD-sitting-IRR-1S-G.SUB

Link Base₂: positive Irrealis CL.
 awi , wañ - r - mē - an - n .
 wait hear-IRR-R.PST-1S - 2S

'If I had not been sleeping, well, I would have heard you.'

- (e). Base₁: positive Nonfinal CL.
 rip - kor yi - mē - nēm ,
 swamp-AD go-R.PST- 1PL

Base₂: positive Irrealis CL
 nandëmm was - r - mē - m - nēm
 snakes pierce-IRR-R.PST-3PL-1PL

'Had we gone to the swamp (we did not) snakes would have bitten us (they did not).'

Constituent Clauses of the Contrafactual Sentence

Constituent subordinate clauses of the Contrafactual Sentence include the Nonfinal Clause (cf. Table 108), Double Irrealis Clause (cf. Table 118), the Irrealis Clause, and the Subordinate Hortative Clause.

An irrealis clause is a clause with the form of a positive indicative clause whose predicate is manifested by a positive irrealis verb (Table 120) or a negative irrealis verb (Table 121).

Table 120: Positive Irrealis Verb

Func	<u>±</u> Elev	+ Head	+ Mode ₂	+ Tense	+ Actor	<u>±</u> Undergoer	<u>±</u> Elev
exp	(v. Tab 69)	verb stem	-r (Past Irrealis)	ast Tense markers	PNG markers	PNG markers	(v. sec. V.B.2)

See examples 15(a), (d), and (e) for illustrations of the positive irrealis verb.

The negative form of the Irrealis verb occurs with a formulaic serialized stem and with the present tense irrealis marker as in the negative form of the Irrealis Hortative verb.

Table 121: Negative Irrealis Verb

Func	+ Head	+ Mode ₂	+ Actor Term	Undergoer Subord.
exp	(Non) Possd Mod. + (Aux) v. root - dohra - roh 'sitting'	kah 'present Irrealis'	PNG mkr.	PNG mkr. -(ne) G.SUB
		- yi 'go'		

The serialized stem of the negative Irrealis verb is composed of a form of the (Non) Possessed Modifier (Table 44) plus one of two verb roots as indicated on Table 121. The negative Irrealis verb is nonfinite in form, and it manifests Base₁ of the Contrafactual Sentence. See sentence 15(d) for an example of a negative Irrealis verb.

The final constituent of the Contrafactual Sentence to be discussed is the Subordinate Hortative Clause. The predicate of the Subordinate Hortative Clause exhibits a hortative form of either the positive or negative Irrealis verb. See sentences 15(a), (b), and (c) for examples of the Subordinate Hortative Clause.

Table 122: Form-meaning Correlations
of the Contrafactual Sentence

	Contrafactual Hypothetical Premise		Contrafactual Hypothetical Conclusion	
	Positive CL	Negative CL	Positive CL	Negative CL
With undesirable implication (the opposite should have happened)	Subord. (irrealis) Hortative CL	neg Subord. (irrealis) Hortative CL	Irrealis CL	Double Irrealis CL
With neutral implication	Nonfinal CL	neg. Irrealis		

Summarizing the variants of the Contrafactual Sentence in Table 122 facilitates the inference of form-meaning correlations. It is easy to see, for example, that the hortative forms contribute the component of obligation. The most general correlation is that the notions of conditionality and contrafactuality are encoded by the irrealis verb forms. The exception to this is of course the Nonfinal Clause of the premise which expresses hypotheticality and contrafactuality only by a rising intonation (the same mechanism is employed in the Conditional Sentence to encode hypotheticality only). From this general correlation and the pattern of the system, an irrealis clause should appear where the Nonfinal Clause does. If that were the case, then the difference between the first and second rows of the Table would be the presence or absence of the hortative marker and the difference between the first and second columns would be the absence or presence of the feature 'negative';

and the feature 'irrealis' would appear in every cell of the Table. The asymmetry caused by the Nonfinal Clause may be due to a historical replacement in which the contrafactuality derives from the clause in Base₂. The effect of such a change would be to simplify the morphological complexity and semantic redundancy in the first clause but to complicate the hearer's processing of the sentence by not signalling the contrafactuality of the first clause until the second clause.

6) CONTRA-EXPECTANCY SENTENCE

The Contra-expectancy Sentence is very similar to the Contrafactual Sentence. The two are semantically distinct as signalled by different linking particle complexes. To help elucidate their semantic differences, they are discussed as separate types.

Table 123: Contra-expectancy Sentence

Functions	+ Base ₁	+ Link	+ Base ₂
intonation	non-falling	non-falling	falling
exponents	Subordinate Hortative Clause Nonfinal CL(?)	to iñji 'but/yet thus'	Double Irrealis Clause Irrealis Clause

Logical relation: Frustrated contrafactuality.¹

Base₁ expresses the contrafactual hypothetical premise, and Base₂ expresses the unexpected hypothetical conclusion, which may or may not convey contrafactuality. Like an Antithetical Sentence, the, there is a blockage (by Base₂ of an expected implication which is expressed in Base₁. Contrary to the Contrafactual Sentence, the Subordinate Hortative Clause in Base₁ of the Contra-expectancy Sentence does not convey

¹Other types of counter expectancies (or "frustration" in Longacre's terms, 1976:149 ff) are encoded by the Antithetical Sentence type in Alambak.

obligation, and there is no implication as to the desirability or otherwise, had the contrafactual premise actually eventuated.

16. Base₁: negative Subordinate Hortative CL.

a - beb - ta - dohra - yi - kah - n - n ,
HORT-bad-PROC-NONPOSSD - AUX - IRR -2S-G.SUB

Link Base₂: Double Irrealis CL.

to iñji muh - r - fë - t - n - t
yet thus climb-IRR-I.PST-FUT-2S-3SF
.IRR

*'Had you not become bad (i.e., grown old), even so
you would not have climbed it.'*

*(= You would not have climbed it even if you had not
already grown old.)*

The contrafactuality in sentence 16 is that the hearer actually has become old; there is no sense of obligation or regret, such that he should not have become old. The expected implication is that if he were not already old he would have climbed the object; the unexpected blockage of that expectancy is that he would not have climbed it even then. Sentence 17 may be analysed in a similar way.

17. Base₁: negative Subordinate Hortative CL.

mŷy - e a - tat - dohra - roh - kah - n - t ,
tree-INST HORT-hit-NONPOSSD - AUX-PR.IRR-2S -3SF

Link Base₂: Irrealis CL.

to iñji nayay - r - mē - Ø kalabus
yet thus come -IRR-R.PST-2S gaol

*'Had you not hit her with a tree (i.e., a stick), even
so you would have come to gaol.'*

[If, for example, other acts were committed which were serious enough on their own to call for a gaol sentence.]

In sentence 17, Base₁ expresses a contrafactual statement; Base₂ is not contrafactual but merely a hypothetical statement which is conditional upon the premise in Base₁.

Clause Constituents of the Contra-expectancy Sentence

The constituents of the Contra-expectancy Sentence have been discussed previously. See discussions of the Double Irrealis Clause, Irrealis Clause, and Subordinate Hortative Clause on pp. 430 and 434 ff,

7) SIMILE SENTENCE

Table 124: Simile Sentence

Functions	+ Base ₁	+ Base ₂
intonation	rising	falling
exponents	Infinitive Complement Clause	Resemblance Clause

logical relation: Illustration by simile.¹

18. Base₁: nandëmrho that tirt yakti - kfët ,
snake's skin hand touch - INF

Base₂: iñji gënNgtay - w - t wurat
like cold -IMPF-3SF foot
.that

'A hand, to touch a snake's skin, like that (my) foot is cold.'

(= My foot is cold like the touch of a snake's skin.)

¹The same semantic relationship of illustration by simile may be expressed both on the clause level and intersententially. On the clause level, a Resemblance Phrase (Table 80, p. 286) expresses the simile as an illustration of the subject NP of the clause, e.g.,

19. Res. PH
metf yawym kañjë nanayurhasiwf
women dogs like they,are.fighting
'The women are fighting like dogs '

Intersententially a Resemblance Clause may make a comparison with the previous sentence, e.g.,

20. Yawym masat nanayurwëm,
'Dogs fight a lot.'

Metf iñji nanayurwëf,
'The (two) women fight like that.'

(continued overleaf)

Clause Constituents of the Simile Sentence

The two constituents of the Simile Sentence are the Infinitive Complement (Base₁) and the Resemblance Clause (Base₂).

The Infinitive Complement includes a nonfinite predicate which is marked with the Infinitive marker -kfët (freely fluctuating with the allomorph -t). This construction more frequently manifests the predicate of a Purpose Clause, and thus it will be described in more detail in conjunction with the the discussion of the Purpose Clause in section IX.C.2.

The Resemblance Clause is composed of a relator or link iñji 'thus, like that' plus an independent clause (cf. in example 21).

2. SUBORDINATION

a. LOW COHESIVENESS

The sentence types with a relatively low degree of internal cohesion--Paraphrase Sentence, Quotation Sentence, Alternative Question Sentence, and Loosely Conjoined Sentence--can be compared in Table 106. Apart from subordinating intonational patterns, they manifest minimal features of cohesion. Specifically, the Paraphrase Sentence exhibits a conjunction; the Quote formula of the Quotation Sentence is not isolatable as a minimal sentence; and the Alternative Question Sentence exhibits a conjunction. The Loosely Conjoined Sentence is somewhat more cohesive with a Nonfinal Clause or a General Subordinate Clause manifesting the Dependent Base.

(cont.)

Longacre (1976:142) includes the semantic relationship of "Exemplification" as a type of Illustration. This relationship can only be encoded by concatenating independent sentences in Alamblak, e.g.,

21. Mienrpar dohhiNgnamarñaeter.

'Only Mien is a good canoe maker.'

indar rër hiNgnamë doht wahitint.

'Look at this canoe which he made.'

Without repeating the Dependent Base, the relationship of negated antonym is encoded by the sentence.

25. Negation CL.

nhai fähr tufnahrfer , nuNgwat tufnahr.
 no pig he.did.not.shoot, bird he.shot
 'No, he did not shoot a pig, he shot a bird.'

Clause Constituents of the Paraphrase Sentence

The Dependent Base is manifested by the Negation Clause. The Negation Clause is a subtype of a negative declarative clause (cf. Table 87 p.298). There are structural differences between the two clause types. The negation function slot in a Negation Clause can be manifested only by the particle nhai 'no'. Other negative declarative clauses only rarely employ nhai in their negation slot. More commonly the other negative particles occur, i.e., fiñji 'not (non-future)', afë 'not (negative of uncertainty)' and tafitë 'not yet'. The preferred linear ordering of the negation function slot differs for the two clause types as well. The negation slot of the Negation Clause occurs clause-initially; the negation slot of a negative declarative clause tends to occur immediately before the verb. Of the particles manifesting the negation slots of these two clause types, the Negative Particle nhai 'no' commonly occurs as a minimal utterance (e.g., as an answer to a question). Of the other particles, only tafitë 'not yet' occurs as a minimal utterance, and that infrequently.

Thus, the Negation Clause only marginally contrasts with a negative indicative clause structurally. There are also differences in distribution, however. That form of a negative indicative clause which we have termed a Negation Clause would only rarely occur in isolation as an independent clause. It is subordinated by a "suspensive" intonational pattern in the Paraphrase Sentence; thus it is subordinate in the same way that a Nonfinal Clause is.

From our discussion of the Paraphrase Sentence and its position in Table 106, it is clear that the dependent clause is subordinate to the independent clause only to a minimal degree.

This fact is reflected in the nearly even distribution of CD Communicative Dynamism between the clauses. Even here, however, the positive statement must exhibit a greater degree of CD than the anticipatory negative statement. A negative statement provides the hearer with only a minimal amount of information, as important as that could be in a given situation, which prepares him to focus on the positive statement of the actual state of affairs.

2) QUOTATION SENTENCE

Table 126: Quotation Sentence

Functions	+ Quote Formula	+ Quotation
intonation	level	falling
exponents	Quotation Clause	independent clause

logical relations: direct quotation, contrary-to-fact obligation.¹

27. Quotation Clause

yimar famur na indkor kita- a
 man said/thought 1S there go - 1S
 'A man said, "I am going there."'

¹The Quotation Sentence may manifest Base₁ of the Antithetical Sentence, to encode notions of frustrated intention and frustrated attribution. If the extra-linguistic context is such that the counter statement (Base₂) to Base₁ is unnecessary, the Quotation Sentence in isolation may express these notions. Thus, example 27 can imply that the man intended to go "there" but in fact never did go. Or a sentence such as example 26 may imply that the man thought it was a pig, but obviously (inferred from the context) it was not.

26. ind yimar famur fëh - e - r
 DEM man said/thought pig -COP-3SM
 'The man thought, "It is a pig".'

Example 28 illustrates contrary-to-fact obligation interpretations of the Quotation Sentence.

28(a). Quotation CL

may - r - mē - r
say-IRR-R.PST-3SM

fēhm a - tu - fīnah - an - m
pigs HORT-throw-arrive-1S-3PL

'He should have said, "Let me shoot the pigs."'
(= *'He should have shot the pigs.'*)

- (b). may - r - mē - r fēhm tu - fīnah - rhw - an - m
say-IRR-R.PST-3SM pigs throw-arrive-FUT - 1S -3PL
'He should have said, "I will shoot the pigs."'
(= *'He should have shot the pigs.'*)

The Quotation Clause is used as a rhetorical device rather than as a quotation introducer in example 28 above. It is described as manifesting the Rhetorical Predicate function of the Contrafactual Hortative in section VI.B.3. The predicate of the Quotation Clause (may 'say') takes the irrealis form, but the clause itself must be of positive polarity. It also takes a past tense and an Actor marker. The predicate of the independent clause is either hortative or future indicative in form and may be of either polarity. It must host the first-person-singular Actor marker.

Clause Constituents of the Quotation Sentence

The Quote formula function of the Quotation Sentence is manifested by a Quotation Clause. A Quotation Clause consists of a predicate which is manifested by may 'say/think'; in all other respects the clause is the same as any other indicative clause.

The subordinate relationship of the Quotation Clause to the independent clause is manifested by the fact that the Quotation Clause cannot stand on its own as a minimal sentence.

The Nonfinal Clause of the Dependent Base is, like a normal Yes/No Interrogative Clause, morpho-syntactically indistinguishable from an independent declarative clause. A Yes/No Interrogative is intonationally marked (cf. section II.F), but the Nonfinal Clause in an Alternative Question Sentence is not marked intonationally as a Yes/No Interrogative. The Nonfinal Clause is marked with a rising 'suspensive' intonation which is common to subordinated declarative clauses as well as the interrogative clauses here.

The internal cohesion of this sentence type, then is very weak, depending only on the intonational pattern on the first clause.¹

4) LOOSELY CONJOINED SENTENCE

Table 128: Loosely Conjoined Sentence

Functions	(+ Dependent Base) ^R	+ Independent Base
intonation	non-falling	falling
exponents	General Subordinate Clause Nonfinal Clause	independent clause

logical relations: Coupling which may or may not imply temporal relationships, and may or may not imply efficient clause by the subordinate clause.

The subordinate Nonfinal Clause may manifest a very low degree of cohesion with the independent clause; example 30 manifests a Nonfinal Clause which is subordinated only by a 'suspensive' level intonational pattern.

¹Whether or not the suspensive intonational pattern can be interpreted as marking one clause dependent upon another is debatable. It might just as well be a pragmatic interlocutory clue that the larger processing unit is not yet completed allowing for the constituent clauses to be co-ordinately or subordinately related.

30. Nonfinal Clause Nonfinal Clause
 womr bi kawhanitr, womr dambur kitr,
 another already he.is.walking, another spider going
 womr tikwanohwër.
 another he.is.crawling

*'One is already walking, another is going (like) a spider
 (i.e., creeping), (and) another is crawling.'*

A higher degree of cohesion is obtained if the verb in the Nonfinal Clause manifests the Presupposition marker and the switch reference marker. (Example 31(b) can be interpreted with an efficient cause relationship.)

- 31 (a). Nonfinal Nonfinal Clause
 yimam nakum niti - w - a - t - m - m,
 men sago pulverize-IMPF-PRSUP-DA-3PL-3PL
 .palms
 metm nëf - wë - m - m.
 women strain-IMPF-3PL-3PL

'Men pulverize sago palms, (and) women strain (the pulp).'

- (b). Nonfinal Clause
 marr tay - w - a - t - r,
 sun shine-IMPF-PRSUP-DA-3SM
 yikyi - w - a.
 perspire-IMPF-1S

'The sun shining, I am perspiring.'

'Because the sun is shining I am perspiring.'

The General Subordinate Clause appears to always manifest the Presupposition marker (PRSUP) when occurring in the Loosely Conjoined Sentence. As a result, the Loosely Conjoined Sentence which employs a General Subordinate Clause has as much internal cohesion as the sentences in example 31.

32. General Subordinate CL

nëNgorf ha - tonit - w - a - r - ne ,
trucks CAUSE-run- IMPF-PRSUP-3SM-G.SUB

kuñm hiNgnaywër.

houses he.builds

'He runs (two) trucks, (and) builds houses.'

The General Subordinate Clause can be interpreted as the reason in an efficient cause relationship as was the case with the Nonfinal Clause in example 31 (b). The bases may occur in either order producing a reason-result or result-reason relationship.

33(a). Gen. Subord. Clause

faw - ñifha - nayay - r - n , hoe - krif - wë - r
walk-until - come- 3SM-G.SUB sleep-until-IMPF-3SM
.daybreak .afternoon

'(Since) he walked coming until daybreak, he is sleeping until the afternoon.'

(b).

Gen. Subord. Clause

hoekrifwër ñiNga - krkot - w - a - r - n
he.is.sleeping.until eye - sleepy-IMPF-PRSUP-3SM-G.SUB
.afternoon

'He is sleeping until the afternoon (because) he is sleepy.'

Example 34 further illustrates coupling which implies sequential temporal relationship between the clauses.

34. G. SUB. CL. G. SUB. CL.
hoe - r - n siña - r - n ,
sleep-3SM-G.SUB rise-3SM-G.SUB

G. SUB. CL.
yaw - ñimbho - hani - r - n , më - fīnah - r .
walk- piece - PROG -3SM-G.SUB ELEV-arrive-3SM

'He slept, arose, walked a short distance, (and) arrived.'

b. HIGH COHESIVENESS

Sentences with a high degree of cohesion approach an area of indeterminacy where it is difficult to determine whether the sentence or clause is the most appropriate level for describing the relationships between clauses. Two sentence types will be discussed in this section, the Tightly Conjoined Sentence and the Reason Sentence. In the next chapter, clauses exhibiting an even greater degree of dependency, Time and Purpose adverbial clauses, will be discussed. Adverbial clauses and other subordinate clauses in sentences with a high degree of cohesion all tend to encode backgrounded or old information in the sentence.

1) TIGHTLY CONJOINED SENTENCE

The Tightly Conjoined Sentence is similar to the Loosely Conjoined Sentence differing only in the degree of internal cohesion and flexibility of semantic encoding.

Table 129: Tightly Conjoined Sentence

Functions	(+ Dependent Base) ^R	+ Independent Base
intonation	rising	falling
exponents	Truncated Clause	independent clause

logical relation: Coupling which may or may not imply temporal relationships.

The Truncated Clause (cf. section C.1.b.3), this chapter) manifests a high degree of cohesion with the independent clause. Some of its features of dependency are as follows: it is not isolatable as a minimal sentence, inasmuch as its predicate lacks tense and the Actor pronominal affix, aspect, and mode marking. The Truncated Clause must have the same tense, Actor, aspect, and mode, as the independent clause.

35. Truncated Clause

rpa wikr hiNgna, wom wikr roh - foray - w - a
one week work another week sitting-empty-IMPF- 1S

'I work for one week, another week I remain idle.'

2) REASON SENTENCE

The Reason Sentence itself fulfills an important role in the cohesiveness of discourse. The subordinate clause of the Reason Sentence manifests a pro-verb which recapitulates the previous sentence as the reason for the predication of the main clause.

Table 130: Reason Sentence

Functions	+ Recapitulation Base	+ Independent Base
intonation	rising	falling
exponents	Reason Subordinate Clause	independent clause

logical relation: Efficient cause.

In example 36, the Reason sentence follows a sentence as it would in discourse.

36. yira buga - m fa - mē - r - m .
 fish all -3PL eat-R.PST-3SM-3PL

Reason Sentence

ind - net - r - n , yati - fa - mē - r .
 DEM - do -3SM-G.SUB stomach -eat-R.PST-3SM

*'He ate all of the fish. He did that (therefore),
 he had a stomach ache.'*

Clause Constituents of the Reason Sentence

The Reason subordinate Clause is a formulaic sub-type of the General Subordinate Clause. The demonstrative is incorporated into the predicate which is manifested by the pro-verb net 'do'. The pro-verb manifests the Actor suffix followed by the subordinator -ne.

Syntactically, the subordinate clause is dependent upon the main clause by its subordinated form. Semantically only old information, known from the immediate context, can be encoded by the subordinate clause.

3. COMPLEMENTATION: A POSTSCRIPT

Complementation has been widely discussed as an important syntactic process or relationship within the sentence; see, for example, Rosenbaum (1967). The relationships between clauses in Alamblak has been described thus far without reference to complementation, however.

Complementation may be defined as the complementing or completing relationship of a sentential unit to the main verb of the sentence. This type of relationship is handled in a number of ways in Alamblak without recourse to the notion of complementation in the analysis; one type of dependent clause, the Purpose Clause, may be best described as bearing a complementation relationship to the main predicate.

Many cases of complementation in English are equivalent to dependent clauses manifesting a function within the noun phrase in Alamblak. Thus the Nominal Clause (v. section IV.C.2.f) manifesting the Head function is used in Alamblak for constructions such as, "his going to school" in "I desire his going to school." A relative clause (v. section IV.C.2.d) or a direct quotation (cf. the Quotation Sentence in section VIII.C.2.a.2) is employed in Alamblak for "that" complements in English, e.g.,

37. G. Rel. CL
 na kuñt hiNgnamë mirëkifef - t wanuya
 1S house built talk - 3SF I.heard
 'I heard the talk (that) I built a house.'

The Purpose Clause, which can be nicely analysed as manifesting a complement function in a matrix clause, has been listed as a part of the periphery of the clause in section VI.B.1. It is discussed with adverbial clauses in the next chapter.

Chapter IX

MORE ON DEPENDENT CLAUSES

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Chapter IX

MORE ON DEPENDENT CLAUSES

A. INTRODUCTION

Dependent clauses have been described in section C of the last chapter under co-ordination and subordination. In this chapter other dependent clauses which are typically not sentence constituents are discussed. These, called embedded clauses, include Time Clauses, Relative Clauses, the Purpose Clause and Nominal Clauses. The discussion will include a description of syntactic and semantic structures as well as a section on coreference between clauses.

B. EMBEDDED CLAUSES

Embedded clauses contrast both structurally and distributionally with subordinate clauses. Distributionally embedded clauses may (or must) occur as constituents of phrase or clause level constructions. The term subordination has been reserved for a relationship which holds between clauses on the sentence level.

Structurally, embedded clauses are the least sentential of the dependent clauses in that they exhibit a lesser degree of independence from the main clause to which they are associated; in other words, there is a greater degree of cohesion between embedded clauses and the main clause of the sentence. Phonologically, embedded clauses are usually thoroughly integrated within the matrix clause whereas subordinate clauses within the sentence are marked with a "suspensive" (cf. section II.F.) intonational pattern which potentially includes a pause following the clause. Structural features of subordinate clauses and three embedded clauses and the degrees of cohesion which characterize them can be reviewed in Table 106.

Functionally, some of the embedded clauses parallel subordinate clauses in terms of encoding old and/or backgrounded information in the clause, e.g., Time clauses and Relative clauses. Other embedded clauses, viz., the Purpose Clause and Nominal Clauses cannot be particularly associated with either backgrounded or foregrounded information. This is true even though they exhibit the greatest degree of structural cohesion within the clause which

tends to correlate with a low degree of Communicative Dynamism in subordinate clauses and other embedded clauses.

Embedded clauses are compared according to their salient structural features in Table 131.

Table 131: Embedded Clauses

	Non-finite	No pronominal suffixes	Noun incorporation	Genitivized nouns
SIM. Time CL	-	X	-	-
SEQ. Time CL	X	X	-	-
General REL Clause	-	X	X	-
(Non)POSSD. Modifier	X	X	X	-
Purpose REL Clause	X	X	X	X
Purpose Clause	X	X	X	X
Nominal CL	X	X	X	X

Embedded clauses 1) typically exhibit a nonfinite verb form, without Actor and Undergoer pronominal markers (cf. V.B.2.a.), 2) potentially incorporate nouns into the verb (cf. V.B.3.), and 3) potentially employ genitive forms of noun phrases corresponding to nuclear NP's of independent clauses. These features contrast with independent clauses which do not have genitivized nuclear NP's, and they tend to neither exhibit nonfinite verbs nor incorporate nouns into the verb, but they do employ person markers. By these features, then, the embedded clauses near the top of Table 131 are the most sentential. The relative clauses (including the (Non)Possessed Modifier) and Nominal clauses are described in Chapter IV. The others, i.e., the adverbial clauses, are described in the next section.

The phenomenon of noun incorporation is discussed in section V.B.3., for both independent and embedded clauses. The pattern of genitivization is basically that the nuclear noun phrase which is least accessible to verbal cross-referencing in independent clauses is most accessible to genitivization in embedded clauses. Formally an ergative pattern is followed with subjects of intransitives and

objects of transitives being optionally marked with the genitive (i.e., possessive) marker. With three-place predicates, the Outer Object (i.e., 'patient' noun) is marked with the genitive. If both the Inner Object (i.e., 'benefactive' or 'recipient' noun) and Outer Object are manifested, the Inner Object will be genitivized only if the Outer Object is incorporated into the verb, which is the typical case if there are two or three arguments extant in the clause. The Nominal Clause varies slightly from this pattern as discussed in section IV.C.2.f.2). Noun phrases with peripheral semantic roles (i.e., locationals, etc.) may occur as an Outer Object in the genitive form if one of the two object positions is available. Thus, syntactic doubling of genitivized objects is disallowed. In Relational Grammar terms, oblique NP's may be promoted to a genitivizable object position.

C. ADVERBIAL CLAUSES

Adverbial clauses are a part of the setting of either sentences or clauses, i.e., they provide a temporal reference for or indicate the purpose of the main predication.¹ Temporal clauses manifest a sentential adverbial function as readily as they do a clausal adverbial function. The Purpose clause on the other hand seems to function only on the clause level.

1. TIME CLAUSES

Two types of Time Clauses are distinguished by verbal affixes, the Simultaneous Clause and the Sequence Clause. One form of the General Subordinate Clause which relates to the main clause by expressing temporal overlap will be discussed here as well.

Time clauses have been compared with other embedded clauses

¹ Embedded clauses which manifest locative and manner functions occur only in the form of relative clauses; Time Clauses may occur as relative clauses as well (cf. IV.C.2.d and VI.B.). Sandra Thompson, in Thompson and Longacre (n.d. p.16) explains the typical association of these clauses with relative clauses by the fact that these clauses function, like single nouns, as arguments of the predicate. The relationship can be expressed in such a way, however, so as to not associate these embedded clauses as constituents of clauses to the exclusion of sentences. For example, as relative clauses identify nominal elements, even so, time, location, and manner clauses identify the orientational elements of the clause or sentence (i.e., the main predication with its subordinate predicates).

in Table 131. According to the parameters of Table 131, Time Clauses are the most sentential, of the embedded clauses in Alamblak. According to the degrees of cohesiveness outlined in Table 106, on the other hand, Time Clauses are among the least sentential (i.e., the least independent) of the subordinate clauses. Time Clauses can be located, then, midway between those clauses which are typical sentence constituents and those which are typical clause constituents.

Time Clauses occur sentence-initially or finally. In their most common, initial position, they manifest a 'suspensive' rising intonation. In a final position, they manifest a final intonation following a clause which also manifests a final intonation; this indicates that the sentence-final position functions as an afterthought or clarification position.

a. SIMULTANEOUS CLAUSE

The non-verbal constituents of a Simultaneous Clause are the same as those of an independent clause. The predicate manifests all of the elements of the predicate of an independent clause except that the terminal Actor and Undergoer pronominal affixes are replaced by the subordinating suffix -hat (nonfuture), -thombat (future).

The subordinating suffix of the Simultaneous Clause relates the times of the main predicate and the dependent predicate as being overlapping or sequentially juxtaposed. With the present tense, and the imperfective aspect, the notion of universal temporal quantifier (e.g., 'whenever') may be expressed as well. With future time reference (manifested by the -thombat form without a tense marker on the verb) the clause may express either temporal overlap or conditionality (e.g., 'while', 'when', or 'if')

Simultaneous Clauses are illustrated in example 1 with different tenses.

- 1(a). SIM CL
- | | | | | |
|--------------------|---------------|------------|--------------------|-----------|
| nikë | hiNɡna - mē | - hat, | hɫti - mē | - an - kē |
| <i>you.PL work</i> | - R.PST - SIM | <i>see</i> | - R.PST - 1S - 2PL | |
- 'While you (pl) worked, I saw you (pl).'*

- (b). SIM CL
 yimam noh - hanit - wë - hat, wom kmit kit - wë - nëm
people die - PROG - IMPF - SIM another place go - IMPF-1PL
 'Whenever people continue dying, we go to another place.'

- (c). SIM CL
 yimar nayay - thombat, maruham hirahrnëm
man come - SIM money give.FUT.3SM.1PL
 'When/if the man comes, he will give us money.'

Simultaneity with the General Subordinate Clause

A General Subordinate Clause, whose predicate manifests a verbal (Non)Possessed Modifier (V. Table 44, p.179), provides an orientation which is simultaneous with the main clause. It may or may not be interpreted as the efficient cause of the main clause.

- 2(a). G. SUB Clause
(Non)Possd Mod.
 hoay - et - r - ne, kuñt fiñji fknay- r - fë - a
sleep - POSSD - 3SM - G.SUB house not enter-IRR-I.PST-1S
 'While/since he (was) sleeping, I did not enter the house.'

- (b). G. SUB Clause
 nër wit gur - hayn - et - r - n, yarim -
slit.gong beat - PROG - POSSD - 3SM - G.SUB ELEV -
 finah - më - m yimam.
arrive - R.PST - 3PL men
 'While he was beating the drum, the men arrived.'

b. SEQUENCE CLAUSE

The non-verbal constituents of a Sequence Clause are the same as those of an independent clause. The predicate is non-finite and manifests the subordinating suffix -hatë in place of Actor and Undergoer pronominal suffixes. This suffix indicates that the time of the main clause follows that of the dependent clause. The suffix also functions as a switch reference marker

indicating same actor (SA).¹

- 3(a). SEQ Clause
rēm kmi - thëf - m yi - hatë, këmbrur skunët -
they place - resident - 3PL go - SA possum singe -
më - m r.
R.PST - 3PL - 3SM
'They, the villagers, after having gone, singed the possum.'
- (b). SEQ Clause SEQ CLAUSE
skunët - buga - hatë, rfëtoa - e niNgët - hatë,
singe - all - SA leaves - INS scrape - SA
tas - hayn - më - m - r.
carve (meat) - PROG - R.PST - 3PL - 3SM
'After having thoroughly singed (him), after having scraped
(him) with leaves, they carved him up.'

2. PURPOSE CLAUSE

By its structural and phonological features coupled with its semantic function, the Purpose Clause is best analysed as a constituent of a clause rather than a constituent of a sentence.

Structurally the Purpose Clause is among the least sentential of Alamlak clause types (cf. Tables 106 and 131). Phonologically it is the only subordinate clause in Table 106 which manifests neither a clause-final nor a nonfinal subordinating intonational pattern. It is, in contrast to the other subordinate clauses, thoroughly integrated phonologically into the clause with which it occurs. When it occurs in the periphery of the main clause (either before or after the predicate), there is no potential for pause to set it apart from the main predicate. Syntactically, the Purpose Clause may occur within the independent clause, which is evidence of its status as an embedded clause.

¹The SA marker indicates that the actor of the dependent clause is the same referent as the actor of the main clause. Clauses indicating a sequence of events with different actors between the dependent and main clauses are Non-final and General Subordinate Clauses (Table 108 and 109) manifesting the different actor (DA) suffix. Aspects of the switch reference system are discussed in section E of this chapter.

Semantically, the Purpose Clause expresses the purpose or goal of its associated predicate but does not do the same for a sentence (i.e., a main clause with its associated subordinate clauses). Functionally, in terms of Communicative Dynamism, the Purpose Clause does not parallel sentential subordinate clauses. It was indicated in section VIII.B that an increase in cohesion tends to correlate with a differentiation of CD (with the subordinate clause presenting backgrounded or entirely given information). The Purpose clause, however, which is the most tightly bound of the dependent clauses, typically encodes new information with no apparent difference in backgrounding in comparison to the main predicate. It is concluded, therefore, that the Purpose clause is best analysed as a clause constituent with a purpose-complement function within the clause.

Table 132: Purpose Clause

Func	(Peripheral functions)	+/ \pm (+ Subj	\pm In. Obj	\pm Out Obj)	+ Pred.
exp	(Cf. clause periphery in Chap VI)	$\left[\begin{array}{c} \text{NP} \\ \text{NP} \\ \left\{ \begin{array}{c} \text{NP} \\ \text{GEN. NP} \end{array} \right\} \end{array} \right]$	$\left[\begin{array}{c} \text{NP} \\ \text{GEN. NP} \\ \left\{ \begin{array}{c} \text{GEN. NP} \\ \text{NP} \end{array} \right\} \end{array} \right]$	$\left[\begin{array}{c} \text{GEN. NP} \\ \text{NP base} \\ \text{---} \end{array} \right]$	infinitive verb

Notes: The +/ \pm notation indicates that a nuclear NP either must occur, or may not occur. More explicitly, a one-place verb does not require a nuclear NP to be manifested but a multi-place verb does.

The Purpose Clause is a restricted subtype of the Infinitive Complement. On the one hand, the predicates of the two constructions are the same; they are nonfinite and they both manifest the infinitive (subordinating) suffix -kfët ~ -t in place of Actor and Undergoer suffixes.

On the other hand, the nominal constituents of the two constructions assume different forms. The nuclear participants of the Infinitive Complement are not subject to genitivization or incorporation into the verb as they are in the Purpose Clause. Furthermore, the Infinitive Complement is a sentential constituent, whereas the Purpose Clause is a clausal constituent. As evidence of this final point, the Infinitive Complement manifests a

'suspensive' intonational pattern sentence initially.

- 4(a). $\overbrace{\text{PUR CL}}$
 yuk - t kit - w - a.
bathe - INF *go* - IMPF - 1S
 'I am going to bathe.'
- (b). $\overbrace{\text{PUR CL}}$
 kit-w-a yuk - t.
 'I am going to bathe.'
- (c). $\overbrace{\text{PUR CL}}$
 yënr fëh - r - ho hiti - kifët nayay - wë - r
child pig - 3SM - GEN *see* - INF *come* - IMPF - 3SM
 'A child is coming to see a pig.'
- (d). wa - ha - nit - twa - n - m
 IMPER - CAUS - *go* - FUT.IRR.IMP/HOR - 2S - 3PL
 $\overbrace{\text{PUR CL}}$
 rëm metm wuska - r - oh wikna - hay - kfët
they women things - 3 - GEN.PL *buy* - BEN - INF
 'You take them for them to buy things for women.'

D. ROLE STRUCTURE OF DEPENDENT CLAUSES

Embedded clauses (Table 131), adverbial clauses, and two subordinate clauses (viz., the Truncated Clause and the Infinitive Complement) lack semantic role encoding suffixes on the verb. The roles of the participants of the clauses, therefore, must either be identified in some other way, or they must remain unmarked requiring interpretation according to context. In general, the role encoding systems in these clauses will not be as precise as that of independent clauses; more cases of structural ambiguity are allowed in subordinate clauses where there are potentially more contextual clues for identifying the roles of the participants. There are three mechanisms for encoding role structure in these clauses, word order, genitive case marking on nuclear participants, and rules of coreference between the Actor participants of the dependent and independent clause.

1. WORD ORDER

The word order in the dependent clauses under investigation is employed to encode the role structure of the clause. The rule specifies that the left-most nuclear NP is the Actor. This ordering convention is strict in most of the clauses with some freedom in ordering in relative clauses. Recall that the left-most NP in independent clauses is also the Actor except in a minority of cases where the referential structure overrides that convention. This word order rule is evident even in Sequence Time Clauses (ex. 5), which have another means of identifying the actor participant, i.e., by identifying the Actor as being coreferential with the Actor of the independent clause.

- 5(a). SEQ Clause
- | | | | | | | |
|---|---------------------|-----------------|-------------------|--------------|---------|-----|
| (Actor) | | | | | | |
| fëh - t | yima | - r | hiti | - hatë | yi - më | - t |
| <i>pig</i> - 3SF | <i>person</i> - 3SM | <i>see</i> - SA | <i>go</i> - R.PST | <i>- 3SF</i> | | |
| <i>'The pig, having seen the man, (same actor) went.'</i> | | | | | | |
| (= <i>'Having seen the man, the pig went.'</i>) | | | | | | |

- (b). SEQ Clause
- | | | | | | | | |
|--------------------|------------------|-----------------|-------------------|--------------|--------|---------|-----|
| | | | (Actor) | | | | A |
| * yima | - r | fëh | - t | hiti | - hatë | yi - më | - t |
| <i>person</i> -3SM | <i>pig</i> - 3SF | <i>see</i> - SA | <i>go</i> - R.PST | <i>- 3SF</i> | | | |

Example (b) is ungrammatical since the Actor of the Sequence clause, '*pig*', does not occur to the left of the Undergoer ('*man*'). Fëh-t '*pig*', which is concordant with the Actor marker of the independent verb, is identified as the Actor by the same actor suffix (hatë) on the dependent verb.

Word order, though strict in many dependent clauses, does not often identify the participant roles, since dependent clauses seldom manifest the entire set of participants in the clause.

2. GENITIVE CASE MARKING

The genitive case marking on clausal participants is another means of encoding the role structure. The general pattern has been discussed in section B of this chapter. In general, the noun phrase which is least accessible to verbal cross-referencing

in independent clauses (according to the Actor and Undergoer selectional hierarchies, cf. section VII.C.1.) is the most likely to take the genitive form in dependent clauses. The occurrences of genitive noun phrases are summarized for the Purpose Relative Clause, Nominal Clause and Purpose Clause in Tables 43 and 51 (in Chapter IV), and in Table 132, respectively. The selection of the genitive NP constituent is not a strict syntactic rule based on a hierarchy of grammatical relations, since variation can occur. Usually, however, the genitive will occur on the non-actor if there is more than one nuclear NP in the clause. The factors (e.g., referential factors) which impinge on the general pattern have not been identified at this stage. See examples of the Purpose Relative Clause, Nominal Clause and Purpose Clause for illustrations of genitive NP's in dependent clauses.

E. COREFERENCE BETWEEN CLAUSES

1. COVERT COREFERENCE CONSTRAINTS

Coreferencing constraints between dependent and independent clauses is the third means of encoding the role structure of clauses which manifest neither the Actor and Undergoer markers, nor the participant NP's. In transformational terms, these constraints describe processes of coreferential deletion.

Rules of covert coreference are governed by the predicates involved in both dependent and independent clauses. Some predicates imply a change of actors unless otherwise indicated by overt reference; others imply identical actors; and others are neutral.

Predicates which Anticipate a Change of Actors

Some main clause predicates are Undergoer-focal; they anticipate the Undergoer to be the Actor of the dependent predicate unless the Actor is specified otherwise. These predicates include multi-place verbs such as the following:

tindaw	'beg'
titiwon	'ask'
kfë-rafë	'forbid'
kfë-yfifak	'entice'

6(a).

$\overbrace{\text{yifaemr yënm kfë - yfifak - rah - r - m}}^{\text{U}}$
father children talk - entice - FUT - 3SM - 3PL

Nominal Clause

Act

ϕ skur - r - ho yi - nef - t.

ϕ school - 3SM - GEN go - NOM - 3SF

'Father will entice the children; (about) (their) going (to) school.'

(b).

PUR Clause

$\overbrace{\text{yënt tindaw - t - a } \phi \text{ wuska - r - oh wikna - kfët}}^{\text{U Act}}$
child beg -3SF-1S ϕ things-3-GEN.PL buy -INF

'A child begged me (for me) to buy things.'

Predicates which Anticipate the Same Actors

Some main clause predicates are Actor-focal in that they anticipate the Actor to also be the Actor of the dependent clause unless a different Actor is specified. These predicates include one-place verbs and many multi-placed verbs such as these:

duka 'think/remember'

wofn 'want'

yi 'go'

muh 'climb'

tufinah 'shoot'

7(a).

$\overbrace{\text{kuñ - ko wa - i - kë } \phi \text{ hoay - kfët}}^{\text{A Act}}$
house - AL IMPER - go - 2PL ϕ sleep - INF
 'You (pl) go to a house (for you pl) to sleep.'

(b).

Nominal Clause

$\overbrace{\text{duka - nëhtay - a } \phi \text{ yemrë - r - oh ye - nef - t}}^{\text{A Act}}$
think - deliberate - 1S ϕ meat - 3 -GEN.PL eat-NOM-3SF
 'I debated (about) (my) eating the meat.'

situational context. In general there are no syntactic constraints on when verbal pronominal suffixes may be employed as the only means of referencing the most prominent participants in a given clause. For this reason most two-place clauses do not manifest both Subject and Inner Object NP's in the clause. Often neither is expressed. There are restrictions, however, with the less naturally salient participants, i.e., those manifesting orientation roles in the clause. Predicates of case frames 1 and 2 (Table 102) potentially coreference orientation roles with the Undergoer suffix as nuclear roles. The verbal pronominal suffix may be the sole reference to these participants in a clause only if the noun phrase which is coreferenced is extant in an associated clause of the same sentence. Thus, the sentence unit is the limit of the scope of pronominal suffixes which are coreferencing participants with Orientation roles.

For example, if a location is identified in one sentence (e.g., a single independent clause such as 10(a)) the verbal pronominal suffix cannot coreference it in a subsequent sentence (example 10(b)). The location NP must be repeated in the next sentence if it is to be coreferenced on the verb as a nuclear participant (e.g., example (c)).

10(a). kmi Yamkopin - ko yi - mē - a.
place Amongabi - AL go - R.PST - 1S
'I went to Amongabi village.'

(b).
 * Dbēhna - mē - $\overbrace{\text{an}}^{\text{A}} - \overbrace{\text{t}}^{\text{U}}$
sick - R.PST - 1S - 3SF
 (= 'I was sick at it')

(c).
 $\overbrace{\text{In.Obj (Loc)}}^{\text{-----}}$
 $\overbrace{\text{ɪnd kmi - t}}^{\text{-----}} \text{ dbēhna - mē - } \overbrace{\text{an}}^{\text{A}} - \overbrace{\text{t}}^{\text{U}}$
 DEM *place - 3SF sick - R.PST - 1S - 3SF*
'I was sick (at) the place.'

If, however, the location is identified in a dependent clause, it may be coreferenced by the pronominal suffix without repeating the NP in the independent clause.

- 11(a). SEQ Clause
- kmi Yamkopin - ko yi - hatë, dbëhna - mē - ^Aan - ^Ut
place Amongabi - AL go - SA sick -R.PST - 1S - 3SF
'Having gone to Amongabi village, I was sick (at) it.'
- (b). General Subordinate Clause
- Bro kmi - r tēh - mē - w - a - m - ne,
big place- [3SM] standing-R.PST-IMPF-PRSUP-3PL-G.SUB
- ^A ^U
- yha yha - m dbëhna- mē - w - m - r
time time-3PL sick -R.PST-IMPF-3PL- [3SM]
*'They were remaining (at) the big place, (and) they
 they were being sick every day (at) it.'*
- (c). Nonfinal Clause
- Bro kmi - r yawy-m ri - dbëhna- ak - mē - w -
big place- [3SM] dog-3PL ELEV- sick -INCH-R.PST-IMPF-
- ^A ^A ^U
- a - t - m yima-m dbëhna - mē - w - m - r
PRSUP-DA-3PL man -3PL sick - R.PST -IMPF-3PL - [3SM]
*'Dogs were getting sick (at) the big place (DIFFERENT
 ACTOR), (and) people were sick (at) it.'*

This constraint on the anaphoric use of the Undergoer pronominal suffix may be explained by Givon's (1976) discussion on grammatical agreement. He demonstrated the existence of a general implicational hierarchy of types of NP's which are likely to govern verb agreement, e.g.,

Indefinite obj.] definite obj.] subject

He argues that such a hierarchy is governed by a "universal hierarchy of topicality, i.e., the likelihood of various NP arguments being the topic of sentences, and more particularly the topic in topic-shift constructions" (Givon 1976:152). He suggests that three factors interact to determine the topicality of NP's, natural topicality (e.g., human > non-human), discourse or referentiality (e.g., definite > indefinite) and semantic case role prominence (e.g., agent > dative > accusative).

The hypothesis that verb agreement markers derive from topic-shifted constructions cannot be pursued here. We have seen,

however, that the factors of referentiality discussed by Givón are involved in the verbal pronominal system in Alamblak. The Undergoer selection hierarchy (section VII.C.1) governs the coreferencing of NP's according to semantic role prominence. The constraints on the scope of the Undergoer suffix discussed here seem likely to be related to the natural topicality of NP's in a discourse. NP's which are locational or temporal settings of a discourse are not usually a focus of interest in a discourse. Therefore, if they are selected as a focus of interest and thus marked as a nuclear participant by the Undergoer suffix, they must also be manifested by a noun phrase in the same sentence.

Switch-Reference

We turn now to the switch-reference system which operates between dependent and independent clauses. This system monitors the Actors of the clauses of a sentence as being different or the same. The different actor marker (DA) occurs on the fully inflected predicate of Nonfinal and General Subordinate Clauses. The same actor marker (SA) occurs on the predicate of a Sequence Clause which is not marked with Actor or Undergoer suffixes.

The switch-reference system must be specified as monitoring Actors between clauses rather than Subjects. In section VII.C.3 the notion of subject was analysed in terms of role, reference, and perspective. In that discussion the Actor NP and not the Referentially Prominent NP was seen to control switch-reference. Example 58 in Chapter VII is repeated here as example 12(a).

12(a).

		┌──────────────────────────┐						
		Actor (For)				A	U	
yima	-r	nūNgram-	t	kina-	më	-t	-t	-r,
person-3SM		throat	-3SF	dry	-R.PST-DA-	3SF	-3SM	

				A	
				r	
bupa	-m	fut	-më	-r	
water-3PL		drink	-R.PST	-	3SM

'A man was dry because of (his) throat (DIFFERENT ACTOR)
(and) he drank water.'

- (b). Subj (Act) A Actor
 na hiNgnä - mē - t - a, mēfha - t
 1S work - R.PST - DA - 1S head - 3SF

A U
 fa - mē - t - a
 eat (= ache) - R.PST - 3SF - 1S
 'I worked (DIFFERENT ACTOR), (and then) (my) head hurt
 me.'

The word order is strict in the first clause in example (a) which requires the first NP, the non-actor, to be designated as the Referentially Prominent NP (RP). In most cases, the Actor is also the Referentially Prominent NP (i.e., the subject) in the clause; in those cases it is the Subject which controls switch-reference. A distinction of perspective between Actors has no effect on switch reference. Actors are treated the same for switch-reference whether they are in perspective or not (cf. VII.C.3.b for the discussion of perspective, and p. 469 for the discussion of Actors, perspective and switch-reference).

Different Actor

The different actor marker (-t) occurs immediately preceding the Actor and Undergoer suffixes and following the VP Base (cf. Table 55, p. 207) as illustrated below.

VP Base - DIFFERENT ACTOR - Actor - { Undergoer
 General Subordinator }

The Actor and Undergoer suffixes identify the participants of the dependent clause. The different actor marker is a grammatical subordinator which indicates that the actor will be different in the following independent clause. In addition to the examples in 12, further examples are given in 13.

- 13(a). G. SUB Clause
 hi - af - rhwa - t - A
 give - PROL - FUT - DA - 1PL - G.SUB come FUT - 3PL
 'When we have given and separated, they will come.'

- (b). Nonfinal Clause
- $\overbrace{\text{frkih - m\ddot{e} - t - r - r, \text{ nayay - m\ddot{e} - r}}^{\text{A} \quad \text{U} \quad \text{A}}$
full - R.PST - DA - 3SM - 3SM come - R.PST - 3SM
'It (the string bag) was full on him, (and) he came.'

In example (b), the string bag (known from the discourse) bears a Force role as Actor and the man is in the Affective role as Undergoer. The inanimate Force controls the switch-reference as the Actor in the dependent clause.

- (c). Nonfinal Clause
- $\overbrace{\text{wut\ddot{e}nhat \quad turan \quad dak \quad - \quad m\ddot{e} \quad - \quad t \quad - \quad an \quad - \quad t}}^{\text{A} \quad \text{U}}$
breadfruit knock.down.with.a.pole - R.PST - DA - [1S] - 3SF
mi - tat - m\ddot{e} - t - r y\ddot{e}nr
ELEV - hit - R.PST - [3SF] - 3SM child
'I knocked down a breadfruit (DIFFERENT ACTOR) (and) it
(came) down (and) hit a boy.'

In example (c) the inanimate Patient of the dependent clause is the Force Actor of the independent clause.

Same Actor

The same actor marker (-hat\ddot{e}) occurs immediately following the VP Base (cf. Table 55, p. 207) and preceding an optional General Subordinator marker as illustrated below:

VP Base - SAME ACTOR - (General Subordinator)

Actors of two clauses are the same if they are the same referents (e.g., example 14(a) and (b)) or if one is a collective group of actors and the other an individual of that group (e.g., examples (c) and (d)).

- 14(a). SEQ Clause
- $\overbrace{\text{f\ddot{e}h - t \quad tu \quad - \quad f\ddot{i}nah - hat\ddot{e} \quad yifem - r \quad nayay - m\ddot{e} - r}}^{\text{SEQ}}$
pig-3SF throw-arrive-SA \quad father-3SM come -R.PST-3SM
'Having shot a pig, father came.'

- (b). SEQ Clause
yifem - r fëh- t tu -fīnah -hatë- ne, ha -nayay-
father- 3SM pig-3SF throw-arrive-SA -G.SUB CAUS-come-
më - r - t
R.PST- 3SM -3SF
'Father, having shot a pig, he brought him.'
- (c). SEQ Clause
MeNgumari mi -hīti- ak - ni - hatë, ri -në
Mengumari ELEV-see - get - go - SA go N.PST -1D
'Having gotten Mengumari, we went.'
- (d). rër - pnë na - nayur - m.
him - COM REC - fight - 3PL
- SEQ Clause₁
SEQ Clause₂
- na -nayur-hasë-hatë, ye -sëbërba -tañ-hatë- ne
REC-fight-DUR - SA eat-(as spirits do)-CPL- SA -G.SUB
'They fought with him (i.e., the spirit). Having fought for a while, (and he) having eaten (them) (then)...

In example 14(d) the actor(s) and Undergoers are unspecified in the Sequence Clauses. From the meaning and the discourse context it is clear that the actor of the first Sequence Clause is the collective group (required by the reciprocal prefix) composed of a spirit and a pack of dogs. The Sequence Clause indicates that the Actor of the next clause will be the same. The Actor of the next clause is the spirit, one member of the group of actors in the previous clause.

Example (d) also suggests that actors govern switch-reference without regard to whether or not they are in perspective. According to the discussion in VII.C.3.b, an unmarked NP is in perspective relative to an associated comitative NP. Therefore, the spirit is out of perspective in the first clause since he is marked with the Comitative suffix. Assuming that he is still out of perspective in the recapitulation in Sequence clause one, he is considered to be the same actor for purposes of switch-reference in the following clause even though he is not in perspective in the collective group of actors in the previous clause. This conclusion complements the findings from example

12 that actors control switch-reference whether or not they are referentially prominent.

Dummy Independent Clauses

There are apparent exceptions to the characterizations of the switch-reference markers given above. There are a few cases, for example, where the different actor marker (-t) seems to anticipate the same actor and the same actor marker (-hatë) seems to anticipate a different actor. These exceptions occur in texts and are always followed by an interjection marked with sentence-final intonation and pause. These interjections, e.g., *orait* 'alright', *be* 'enough, finish', are interpreted to fulfill a pragmatic function of an independent clause. That is, they signal to the listener to complete his processing of the preceding subordinate clause without waiting for a following clause which was predicted by the switch-reference marker. Given that a speaker does not always anticipate how he will finish what he has started, or that he may change his mind before he finishes, it is not unusual to find residual "exceptions" like these:

15(a).

Maruha-m he - mē - t - ^Ar - nēm, be.
money -3PL give-R.PST-DA-3SM-1PL finish

Be, yi - mē - ^Ar.
finish go - R.PST - 3SM

'He having given us money, (DIFFERENT ACTOR) that is all.
 That is all, he went.'

(b). Wura - e yahotkëmr - hatë, orait.

foot - INS squish.out - SA alright

Bi gënNgî- ta - nit-m, fa - rë - ^Anëm- ^Um
Already cold -PROC-go -3PL eat-N.PST-1D -3PL

'(We) having squished out (the breadfruit nuts) by foot,
 (SAME ACTOR) alright. They were already getting cold,
 (and then) we ate them.'

In example 15(a) the dummy clause *be* has been reiterated with a rising intonation (,) in the second sentence, according to a common pattern of head-tail linkage in Alambalak discourse. Thus the interjection *be* is functioning as a dummy predicate in two distinct ways in that sentence.

Chapter X

THE RELATIONSHIP OF ALAMBLAK TO OTHER MIDDLE SEPIK LANGUAGES

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Chapter X

THE RELATIONSHIP OF ALAMBLAK TO OTHER MIDDLE SEPIK LANGUAGES

A. INTRODUCTION

In this chapter Alamblak is compared with other Sepik Hill (SH) languages and representative languages from other language groups to determine its degree of genetic relationship with those languages. In the process of relating Alamblak to the other Middle Sepik languages, those languages are also compared with each other and a number of preliminary subgrouping hypotheses have been made on the basis of those comparisons. Establishing subgroupings will involve a certain amount of phonological reconstruction which is also of a preliminary nature in this study.

The Sepik Hill languages and dialects under investigation include Sumariup (Sum.), Alamblak (Ala.), Kaningara (Kan.), Watakataui (Wat.), Kapriman-Karambit (Kap. and Krm. dialects), Bisis (Bis.), Mari, Bahinemo (Bah.), Bitara (Bit.) (eastern and western dialects), Sanio-Hiowe (San. and Hio. dialects), Paka, Piame, i.e., Biame, (Pia.), Bikaru (Bik.), Hewa 'P' (of Pauia), Hewa 'M' (of Mongolipa), and Hewa 'K' (of Kiane). Representatives of other language groups include Yessan-Mayo (Y-M), Kwoma (Kwo.), and Iatmul, Nyawara dialect (Iat.). Yessan-Mayo is a member of the Tama Family, Kwoma the Nukuma Family, and Iatmul the Ndu Family (cf. Laycock, 1973). A comparison of the Sepik Hill languages with Karawari¹ showed no clear evidence of a genetic relationship; Karawari is therefore not included in this study.

Four of the Sepik Hill languages, viz., Sumariup, Alamblak, Bahinemo, and Sanio, have been selected for a more in-depth study than that which is carried out for the others. These were chosen for the following reasons:

¹Karawari is a member of the Nor-Pondo Family of the Lower Sepik area (Laycock 1973:33ff) which borders on the Sepik Hill languages to the east.

Alamblak, Bahinemo, and Sanio represent three widely separated areas from the eastern to the western extent of the Sepik Hill area. They also represent the only well-studied languages in the stock, which allows for the checking of data with a greater degree of accuracy than does working with previously unstudied languages. Sumariup was included because of its apparent general relatedness to the other languages of the stock. This factor is evident in the figures of the Dye, Townsend, and Townsend (1968) study, where Sumariup consistently shares higher percentages of cognates with every other language than any other single language among the Sepik Hill languages does.

We will first consider the historical-comparative work that has been done on Middle Sepik languages in order to determine a starting point for the present study. Then we will proceed to a comparison with a preliminary lexicostatistical analysis followed by a more traditional comparative method of comparing sound correspondences, distributions of lexical and grammatical elements, and morphological changes. The data is often incomplete and not always of comparable reliability. We will proceed, therefore, by synthesizing the conclusions for each type of evidence into one or more subgrouping hypotheses.

Some low-level subgrouping relationships within the Sepik Hill Stock will be investigated, with an emphasis on the relationship of Alamblak to neighbouring languages. An east-west division within the Sepik Hill group will be suggested, although some indeterminacy still remains as to 1) where to draw the line between Eastern and Western Sepik Hill, or 2) whether there are two or three first-order subgroups. Finally, wider relationships involving Sepik Hill languages will be investigated briefly.

B. PREVIOUS CLASSIFICATIONS OF MIDDLE SEPIK LANGUAGES

The Sepik Hill Family was first proposed by Dye, et al. (1968). Their preliminary report compared fourteen Sepik Hill languages by the lexicostatistical method. They concluded in their study that the Sepik Hill languages form a family group the members of which are more closely related to each other than they are to neighbouring languages in the Sepik area; they also recognized evidence of wider genetic relationships in the area. They did

not attempt any subgrouping among the Sepik Hill languages.

The lexicostatistical results of the Dye, et.al. survey are reproduced here in Table 133. The figures in Table 133 were based on 120 lexical items which were selected from word lists consisting of 226 items.¹ The languages included in Table 133 are Kaningra, Alamblak (Karawari dialect), Kapriman (Kapriman dialect) Watakataui, Sumariup, Bisis, Mari, Bahinemo, Bitara (the eastern, i.e., Apowasi dialect), Sanio (the western, i.e., Hiowe dialect), Setiali (i.e., Paka)², Gabiano (at the headwaters of the easternmost branch of the Leonard Schultze River), Umairof (of the Om River area), and Hewa (of the southwestern portion of the Hewa area, near Lake Kopiago).

Table 133: Lexicostatistical Comparisons of Sepik Hill Languages (from Dye, et al. 1968:153)

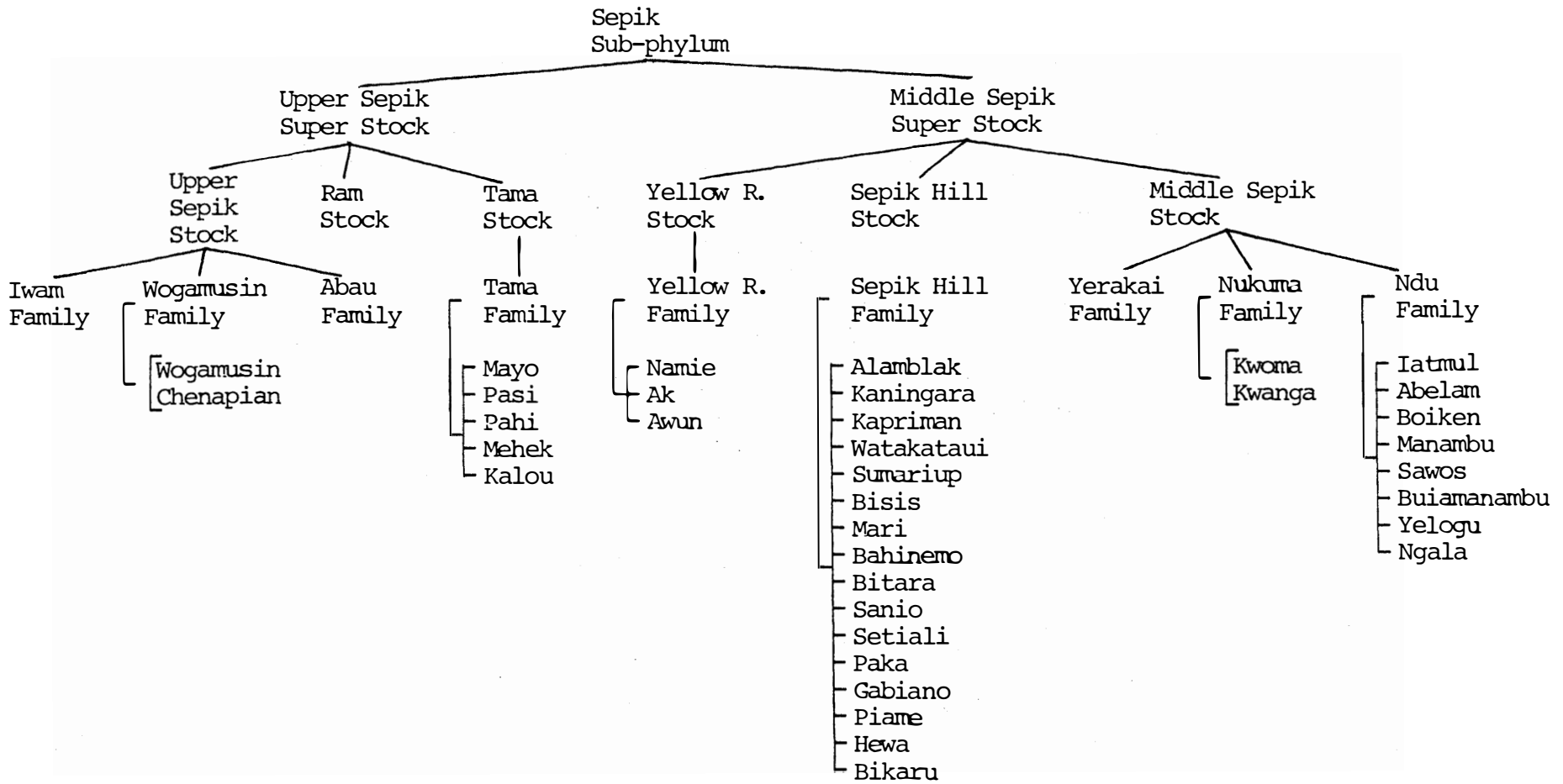
	Kaningra	Alamblak	Kapriman	Watakataui	Sumariup	Bisis	Mari	Bahinemo	Bitara	Sanio	Setiali	Gabiano	Umairof	Hewa	
Kaningra ..		46	40	35	44	39	34	31	29	27	21	16	22	21	Percentage of probable cognates
Alamblak ..	119		43	42	56	39	39	35	33	29	23	15	23	20	
Kapriman ..	119	118		64	57	57	47	38	42	38	32	24	33	31	
Watakataui ..	119	118	118		63	51	46	46	39	35	28	19	28	28	
Sumariup ..	103	102	102	102		49	50	48	42	44	30	23	34	32	
Bisis ..	119	118	118	118	103		53	49	41	35	30	19	27	27	
Mari ..	119	118	118	118	102	118		45	35	31	25	17	28	23	
Bahinemo ..	120	119	119	119	103	119	119		55	36	35	25	37	32	
Bitara ..	117	117	116	116	100	116	116	117		46	36	28	32	30	
Sanio ..	118	117	117	117	101	117	117	118	116		49	28	33	35	
Setiali ..	112	111	111	111	99	111	111	112	109	111		40	49	43	
Gabiano ..	96	96	95	95	80	95	95	96	94	94	89		51	38	
Umairof ..	93	93	92	92	77	92	92	93	92	92	88	87		59	
Hewa ..	84	84	83	83	72	84	84	84	82	82	80	79	75		

Number of words compared = 120

¹The word lists they used were the Summer Institute of Linguistics (Papua New Guinea Branch) Survey Word List of 190 items (Bee and Pence, 1962), and the S.I.L. Lowlands Supplement of 36 items.

²Setiali and Paka are listed as separate languages in Laycock (1973:30-31) with the comment they they may represent dialects of the same language. Dye (personal communication) has concurred with that suspicion.

Figure 1: Sepik Sub-phylum from Laycock (1973:72-78)



Proposals of wider relationships involving the Sepik Hill languages are included in Dye, et al. (1968), Laycock (1973), and Conrad and Dye (1975). In Dye, et al. (1968), it is indicated that languages of the Ndu and Sepik Hill Families tend to share from 10% to 15% cognates. Yessan-Mayo (Tama Family) shared on an average of 15% cognates with Sepik Hill languages.

At a later date Laycock (1973:72-78) suggested a preliminary classification of Sepik languages which was largely impressionistic and "not, at least in the far-reaching relationships, based on detailed lexicostatistic analysis or comparison" (Laycock 1973:2). He presents a comprehensive view based on widespread experience throughout the Sepik area. His classification is partially repeated in Figure 1.

Conrad and Dye (1975) have suggested some realignments of Laycock's preliminary classification. While their study dealt primarily with languages of the Upper Sepik region, they included data from other languages for wider comparisons. They included, among others, representative languages from Laycock's Tama, Nukuma, and Ndu Families, namely Yessan-Mayo, Washkuk (i.e., Kwoma), and Abelam, respectively, and Bahinemo as a representative of the Sepik Hill languages. On the basis of a sample of 102 basic vocabulary items, they proposed a Middle-Sepik Stock composed of three families, namely the Sepik Hill Family, the Yessan-Mayo/Washkuk Family (referred to in Conrad and Dye as the Tama Family), and the Ndu Family. They reported the following cognate percentages.

Table 134: Middle Sepik Stock
Cognate Percentages (from Conrad and Dye, 1975:31)

	Bahinemo (Sepik Hill Family)	Washkuk	Yessan-Mayo
Washkuk (Tama Family)	14		
Yessan-Mayo (Tama Family)	20	38	
Abelam (Ndu Family)	15	21	26

The classification of Conrad and Dye differs from Laycock's as follows. They have removed the Yellow River Family from the Middle Sepik Super Stock and they have moved the Tama Family (represented by Yessan-Mayo) into the Middle Sepik Stock by combining it with the Nukuma Family (represented by Washkuk).

A comparison of these two early classifications indicates that the determination of the relationships of the Tama and Yellow River languages to other Upper Middle Sepik languages is one of the most obvious problems in the classification of Middle Sepik languages. In an attempt to contribute to a discussion of the inter-relationships of the Middle Sepik languages, we will consider the Conrad-Dye hypothesis further in this present work. We will do this by investigating the relationships that the Sepik Hill languages bear with Yessan-Mayo, Kwoma, and Iatmul. Data are not available to check in this study Conrad and Dye's removal of the Yellow River Family from a Middle Sepik Stock.

C. PROCEDURES

In this section we discuss procedural matters relating to the historical-comparative study presented here. Procedures outlined here are devised to prepare the data and then to analyse it in a meaningful way, taking into account the factors involved in this particular case, i.e., the present stage of linguistic research among the Sepik Hill languages and the nature of the data available to work with.

Preparing the Data

Most of the Sepik Hill languages have not been studied in any depth. Furthermore, much of the data from Sepik Hill languages which will be used in this study were collected under difficult field survey conditions. Thus there is clearly room for error in the data itself and indeterminacy in the analysis of it. The data for the languages of the south-west region of the Sepik Hill area are the most incomplete and probably also the least reliable. These languages include Gabiano, Umairof, and Hewa in the Dye, et al. study and Piame, Bikaru, Hewa 'P', Hewa 'M' and Hewa 'K', which have been added in this present study.

For these reasons, the data for most of the Sepik Hill languages have been only partially phonemicized. The tentative phonemicization has been influenced by established analyses of the phonological systems in the well-studied Sepik Hill languages viz., Alamlak (eastern Sepik Hill area) (cf. Chapter II of this thesis), Bahinemo (north-central Sepik Hill area) (cf. Dye and Dye, 1965), and Sanio-Hiowe (western Sepik Hill area) (cf. Lewis and Lewis, 1970). The phonemic status of vocoids is particularly difficult to determine. Where phonemicization is attempted, phonemes are over-differentiated rather than under-differentiated.¹ The data will be written phonemically unless otherwise indicated by phonetic brackets (enclosing words or individual phones).

Identifying Cognates

The identification of cognates is crucial to any historical-comparative analysis of languages. In this study, cognates are determined essentially on the basis of regular sound correspondences between the phonemes of any two morphemes compared (subject, of course, to usual conditions of semantic similarity). Due to the nature of the data, however, it has not always been possible

¹The author has taken the liberty to re-interpret minor aspects of the phonological analyses which are available for some of the languages listed below. Lewis (1972:21) lists the following Sanio-Hiowe vowels: i, e, ε, u, o, a.

In their 1970 manuscript the allophones of /ε/ include [ε]~[ʌ]. In view of the discussion of central vowel systems in the Sepik in chapter II, /ε/ is re-written as /ə/.

In Dye and Dye (1969), the following vowels are listed for Bahinemo: i, e, a, u, o. In the data obtained from Dye's work /e/ is re-written as /ə/. This is done because it appears to be comparable to what is interpreted as a mid-central phoneme in other languages of the area (inasmuch as it has allophones [e] and [ε] preceding and following [y] respectively).

In Kooyers, Kooyers, and Bee (1971), the vowels of Washkuk (Kwoma) are listed as follows: i, e, ε, ɨ, a, u, o. /e/ is manifested as [e] before [y] and [ɨ] before pause and next to [i]. The mid vowel /e/ is written as /ə/ in this study. [ɨ] is combined with /ɨ/ next to [i] as written as /iy/ elsewhere. The Washkuk /p/ is phonetically [p̥] following pause and [p̥]~[p] elsewhere.

Laycock (1965:113) lists the vowels of Iatmul as /ə/, /ʌ/, /a/. Staalsen writes them /ɨ/, /ə/, /a/ in his 1966 article but later revised his analysis to i, ɨ, u, e, o, a (Staalsen 1972: footnote 1 p.66). The three basic central vowels of Iatmul are written as ɨ, ə, a in this study. Non-central vowels are left in phonetic transcription to facilitate direct comparison and to avoid possible obscuring of the comparisons by a particular phonological analysis.

to firmly establish sound correspondences for all of the phonemes in a given morpheme. Some allowance has been made, therefore, for the paucity of data as well as the possibility of errors in transcription. If most (approximately 70-80%) of the phonemes of any two morphemes form a regular correspondence, the morphemes are generally counted as cognate.¹

The number of examples which are required to consider a matching between phonemes to be a regular correspondence also varies from case to case. In general, a minimum of three examples have been required to form a regular sound correspondence. More or less have been required depending on the circumstances of individual cases (e.g., the number of examples available for comparison which contain matchings with a certain phoneme, or other evidence which might suggest the likelihood of borrowing, etc.).

D. THE SEPIK HILL LANGUAGES

We will now consider the inter-relationships among the Sepik Hill languages for purposes of proposing subgrouping(s). Evidence to be considered includes lexicostatistics and isoglosses of sound correspondences, grammatical and lexical morphemes, and morphological changes.

1. LEXICOSTATISTICAL ANALYSIS

The lexicostatistical method is employed in this study as a preliminary approach to the problem of subgrouping according to genetic relationships. We will first discuss the results of the analysis in this study and that done by Dye, et al. (1968). Then we will examine the evidence for subgrouping which may be suggested by the two lexicostatistical studies.

Table 135 presents the results of a lexicostatistical comparison of four Sepik Hill languages.

¹Laycock (1965:150) has allowed a 25% margin of error for his comparison of Ndu Family languages which were generally better studied at the time of his writing than most of the Sepik Hill languages have been to date. Healey (1964:77) has allowed a similar tolerance level.

Table 135: Lexicostatistical Comparisons of Four
Sepik Hill Languages

	Sumariup	Alamblak	Bahinemo	Sanio	
Sumariup		59.9	31.1	19.1	cognate percentages
Alamblak	384		29.4	15.9	
Bahinemo	354	364		21.1	
Sanio	329	334	323		

number of items compared

The figures in Table 135 are not directly comparable to those in Dye, et al. (Table 133). The eastern dialect (i.e., Sanio) of Sanio-Hiowe is included in this study, whereas the western dialect (i.e., Hiowe) is included in the Dye, et al. report. The word lists used in the two studies were different as well, the one used in the present study being an expanded list more than three times the length of the "basic" vocabulary list used in the Dye, et al. report.

The percentages involving Sumariup, Alamblak, and Bahinemo are considerably lower in this study than the Dye, et al. figures (by 6 and 17 percentage points), with the exception of the 59.9% figure for Sumariup - Alamblak. That figure is three or four percentage points higher than the Dye, et al. figure. The apparently inflated figure for the percentage of cognates common to Sumariup and Alamblak may be due to undetected borrowing.

Considerable borrowing between the two languages in less stable areas of vocabulary is quite likely to have happened. Geographically the two language groups border on each other and a majority of Sumariup speakers claim to speak Alamblak. Even though the cognate percentage for Sumariup and Alamblak may be disproportionately high in this study, the percentages in both the present study and the Dye, et al. study are so high that the two languages are undoubtedly closely related. There are enough phonological differences between Sumariup and Alamblak to indicate that there are a considerable number of shared cognates which cannot be ascribed to borrowing.

Subgrouping

We will first consider the evidence for subgrouping from the Dye, et al. study. Even though the authors of that study did not attempt to abstract possible subgroupings from their lexicostatistical data, An analysis of their data does suggest certain subgroupings which may serve as starting points for further investigations.

We will not attempt to draw a complete family tree on the basis of lexicostatistics since no consistent pattern of overall subgrouping can be expected to emerge from the results. Percentages of cognates from the point of view of any one language will tell us which languages appear to be most closely related to that language and which are not closely related. It will tell us nothing, however, about the subgrouping of those languages which are not closely related to it.

Figure 2: Highest Percentages of Shared Cognates (Dye, et al.1968)

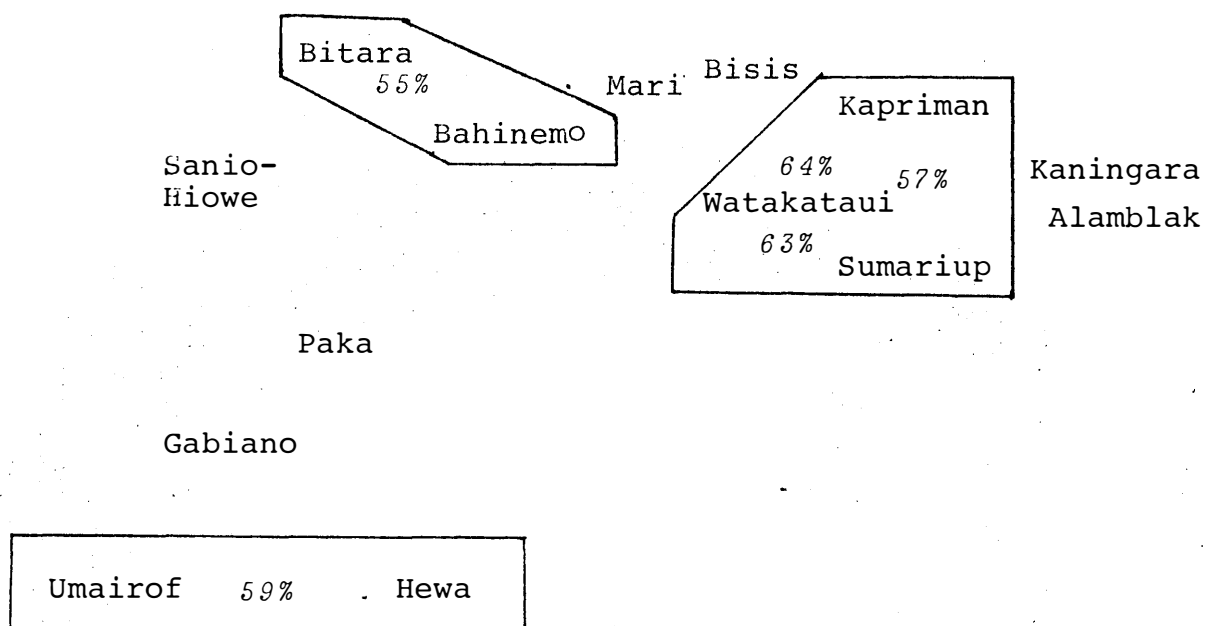
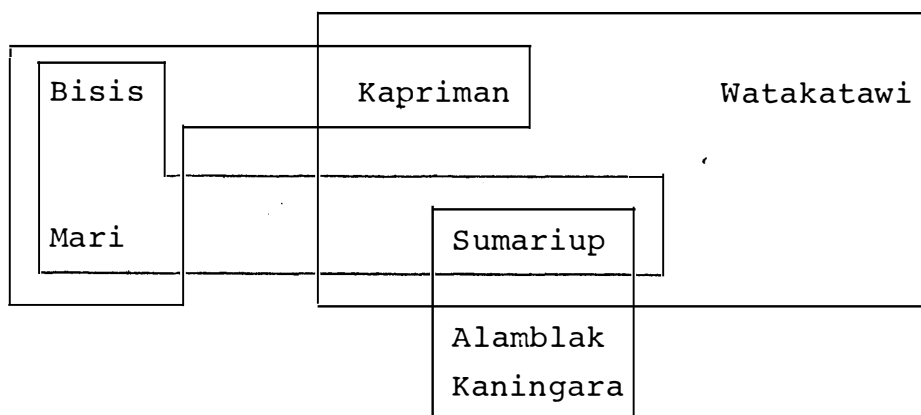


Figure 2 illustrates the groups of languages which mutually share the highest percentages of cognates according to Dye, et al. (1968). Alamblak shares most cognates with Sumariup (56%) but it cannot be included within the eastern grouping in Fig. 2 at the same level since it shares considerably fewer cognates with Watakataui and Kapriman (42% and 53%, respectively). Kaningara shares most cognates with Alamblak and Sumariup (46% and 44%). Sumariup, by contrast, shares no more with Kaningara than it does with Sanio at the extreme western end of the family.

The Dye, et al. figures indicate that Kaningara is in a rather detached relationship with other Sepik Hill languages. This is indicated by the fact that 31 of 115 lexical items compared (27%) are apparently noncognate with forms in any other Sepik Hill language. It is grouped with the eastern languages as shown in Figure 3.

Figure 3: Subgrouping of Eastern Sepik Hill Languages



Bisis and Mari are difficult to place, although they clearly belong to the eastern-most group of languages. Bisis shares most cognates with Kapriman and the next most with Mari, and Mari shares most cognates with Bisis and the next most with Sumariup. This situation is represented by overlapping subgroups in Fig. 3.

Bahinemo and Bitara appear to group together according to Figure 2. How to relate them as a pair to the other Sepik Hill languages is uncertain from cognate percentages. Bahinemo shares more cognates with eastern languages than western languages; Bitara shares more with Sanio to the west (46%) and then with

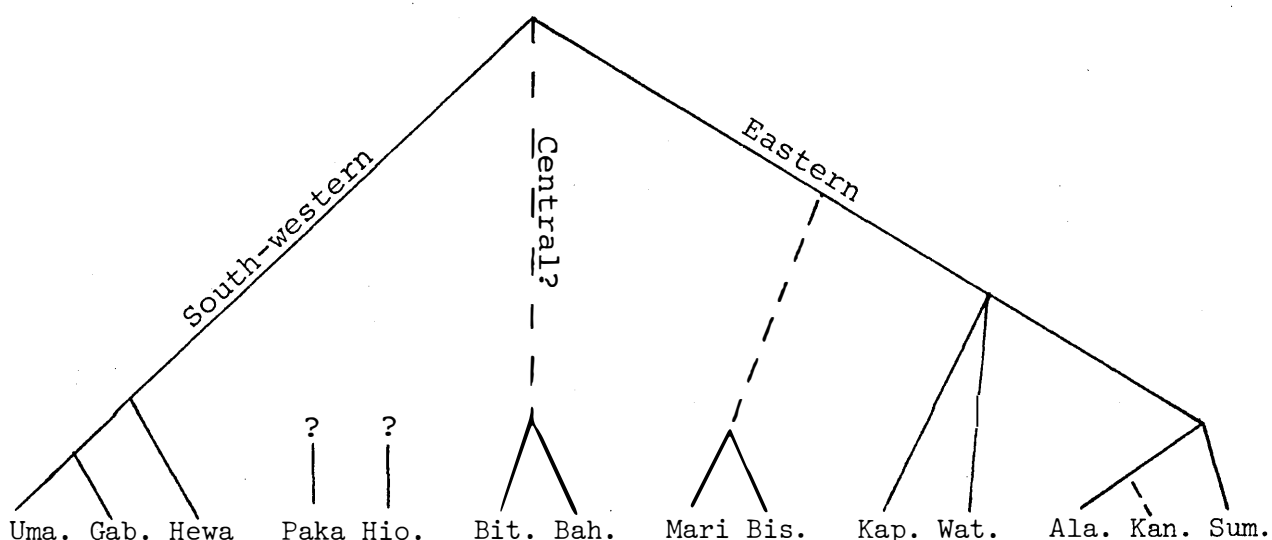
most eastern languages (42%-39%), sharing nearly equal numbers with Paka and Mari (36% and 35%, respectively). We will temporarily leave Bahinemo and Bitara as a central subgroup of Sepik Hill languages.

Of the western languages, Umairof and Hewa are closely related. Gabiano shares most cognates with Umairof but the percentage drops considerably for Hewa. According to the Dye, et al. figures, we can tentatively suggest a southern subgrouping of those languages.

One might be tempted to place the remaining two languages (Sanio and Paka) together as a separate, e.g., western, subgroup. While they share a high percentage of cognates (49%), Paka shares as many cognates with Umairof as it does with Sanio; Sanio, on the other hand, shares more cognates with some of the eastern languages viz., Sumariup (44%) Kapriman (38%), Bahinemo (36%), than it does with Umairof (33%). The figures do not allow us to do any further subgrouping, suggesting rather an earlier dialect chain situation.

In summary, the Dye, et al. study suggests that there are from two to four major subgroups plus smaller subgroupings among the Sepik Hill languages as follows:

Figure 4: Subgrouping Among Sepik Hill Languages by Lexicostatistics (per Dye, et al., 1968:153)



The lexicostatistical study in this work deals with four Sepik Hill languages. The results of that analysis (Table 135) suggest that there are two subgroups including Bahinemo, Sumariup and Alamlak in the east and Sanio in the west.

2. SOUND CORRESPONDENCES

A lexicostatistical survey of a linguistic area will usually give a general picture of which languages are most likely to be genetically closely related. Refining the general statement is a much more difficult task. Subgrouping on the basis of lexicostatistics can only be accepted as a first approximation, preliminary to a more rigorous investigation. Models of subgroupings are traditionally and more confidently proposed on the basis of shared morphological and phonological innovations rather than on the basis of percentages of shared cognates.

The comparative method deals typically with sound change, but subgrouping cannot be based entirely on sound change, particularly if sound changes which have taken place are of a highly predictable type in terms of "universal" tendencies in sound change. Hoenigswald (1960:154) refers to this factor in making reference to subgrouping, "...sound change has comparatively minor weight because the assimilative and otherwise physically plausible possibilities open to a given phonemic structure may be relatively few." Most of the sound changes which have taken place among the Sepik Hill languages are not particularly unusual, and strikingly complicated conditioning environments have not been identified thus far. Therefore, the discussion of sound correspondences to follow will provide largely supportive rather than compelling evidence for various subgrouping possibilities. The greatest contributions of sound correspondences to subgrouping Sepik Hill languages are the constraints which the ordering of a series of sound changes places upon the relationships which are proposed within a family tree.

The set of languages which are included in the study of sound correspondences differs slightly from that which was included in the Dye, et al. lexicostatistical study. The southern languages of that study (Umairof, Gabiano, and Hewa) are not included here since the original data for them was not available for scrutiny.

Other languages of that area are included here, drawing upon data as specified in section I.E. These are Hewa 'K', Hewa 'M', Hewa 'P', Bikaru, and Piame. Since the number of established cognates in these languages is so small, phonemes are often included in correspondence sets, although there may not be enough examples of a given reflex to form a regular correspondence with the other phonemes in the set. Two dialects for three languages are also included: Sanio-Hiowe, Bitara 'W' - Bitara 'E', and Kapriman-Karambit.

Generalized phonemic correspondences between the languages under investigation in this section are listed in Table 136. Phonemes are included with varying degrees of confidence that they are regular correspondences. The number of examples upon which a postulated reflex is based is given in parentheses following each entry. Alternate reflexes are often given followed by a statement of the environment(s) in which they occur. Not enough detailed work was done to be able to provide this information in all cases, particularly with the vowels. In view of the importance of the fusion of sequences in some Sepik languages synchronically, relevant correspondences such as iy - i, ay - e, and aw - o are also included in the table.

The purpose of Table 136 is to present the findings of this study in a useful form for further comparative research. Some discussion of the proto-Sepik Hill sound system follows the table.

Table 136: Sound Correspondences

	*p	*b	*f	*t
Sumariup	b (19)	b (23)	f (35)	t (22)
Alamblak	p (18)	b (28)	f (36)	t (15)
				s/___i (1)
Kaningara	p (3)	p (4)	f (5)	t (4)
Kapriman	b (4)	b (6)	f (8)	t (7)
Karambit	b (4)	b (6)	f (11)	t (4)
Watakataui	b (3)	b (5)		t (5)
Bisis	b (4)	b (3)		t (7)
Mari	b (3)		f (10)	t (6)
Bahinemo	b (9)	b (16)	f (22)	t (9)
Bitara 'E'	b (5)	b (6)	h/ { #___ (2) ___# (1)	t (3)
			b/ v_v (2)	
Bitara 'W'	p (3)	p (2)		t (2)
Sanio	p (2)	p (10)	f (7)	t (7)
			w (1)	
Hiowe	p (2)	p (2)	f (1)	t (4)
			w (3)	
Paka	p (5)		f (1)	
Piame	p (2)	b (4)		t (2)
Bikaru			f (1)	
Hewa 'P'	b (4)		f (3)	t (1)
Hewa 'M'	b (4)	b (1)		
Hewa 'K'	p (1)	p (1)	f (1)	

Table 136 cont.

	*ts	*s	*d
Sumariup	t (12)	s (29)	d (14) d ^y ~j/Pal. __ (2) nd/V__V (6)
Alamblak	t/ __ -hi V (1) š ~ č/ __ +hi V (7)	t (28)	d (10) r/ { b̥+ __ (4) + p j/Pal. __ (3) nd/V__V (6)
Kaningara		t (4)	d (3) j/Pal. __ (2)
Kapriman	t (4)	s (6)	d (4) j/Pal. __ (2)
Karambit	t (3)	s (6)	d (4) j/Pal. __ (1)
Watakataui		s (10)	d (3) d ^y ~j/Pal. __ (2)
Bisis		s (6)	
Mari	t (4)	s (4)	d (6)
Bahinemo	s (7)	h (10) s/ <u> </u> f <u> </u> (3)	d (8)
Bitara 'E'	s (2) s/i __ (2)	s (4)	
Bitara 'W'	t (1) s/ __ i (1)		
Sanio	s (4)	s (6)	t (5)
Hiowe	s (3)	s (4)	t (8)
Paka			
Piame		s (1)	
Bikaru			
Hewa 'P'		s (2)	
Hewa 'M'			
Hewa 'K'			

Table 136 cont.

	*k	*?	*g
Sumariup	k (32)	k (3)	g/{#__ (12) V__V (6) ŋg/V__V (13)
Alamblak	k (26)	g (4)	g/{#__ (11) V__V (2) ŋg/V__V (16)
Kaningara			ŋg/{#__ (1) V__V (2) g/V__V (2)
Kap.-Krm.	k (6)		g/{#__ (4) V__V (4) ŋg/V__V (2)
Watakataui	k (6)		g/{#__ (2) V__V (3) ŋg/V__V (3)
Bisis	k (4)		g/{#__ (2) V__V (3) ŋg/V__V (3)
Mari	k (5)		g/{#__ (5) V__V (5) ŋg/V__V (2)
Bahinemo	k (9)	k (6)	g (16)
Bitara 'E'		k (1)	? (13)
Bitara 'W'		k (1)	
Sanio	k (2)	? (6)	? (11)
Hiowe	k (1)		? (5)
Paka		? (1)	k/#__ (1) ?/V__V (1)
Piame			
Bikaru			
Hewa 'P'		? (1)	k/{#__ (1) V__V (2) ŋg/V__V (1)
Hewa 'M'		? (1)	k/#__ (1) g/V__V (1)
Hewa 'K'		? (1)	k/V__V (2)

Table 136 cont.

	*h	*m	*n	*n ^y
Sumariup	h (56)	m (33)	n (41)	n (9)
			n [~] ñ/y__ (2)	
Alamblak	h (58)	m (32)	n (43)	ñ (9)
			ñ/y__ (1)	n (2)
			ɲ/#*i>ϕ__ (1) ¹	
Kaningara	h (2)	m (5)	n (6)	
	g (7)			
Kapriman	h (14)	m (14)	n (8)	
			ñ (1)	
Karambit	h (14)	m (14)	n (6)	n (3)
		n/__b (1)		
Watakataui	h (12)	m (12)	n (7)	
Bisis	? (11)	m (9)	n (8)	
		n/__t,b (2)		
Mari	? (12)	m (14)	n (5)	
		ɲ/#*i>ϕ__ (1)		
Bahinemo	h (7)	m (15)	n (23)	n (4)
Bitara 'E'	h (2)	m (7)	n (9)	
Bitara 'W'				
Sanio	h (6)	m (10)	n (12)	n (3)
Hiowe	h (6)	m (5)	n (4)	n (2)
Paka	h (2)	m (6)	n (6)	
Piame		m (1)		
Bikaru	h (1)	m (2)	n (3)	
Hewa 'P'	g (2)	m (8)	n (5)	n (3)
Hewa 'M'		m (3)	n (3)	n (2)
Hewa 'K'		m (4)	n (2)	n (1)

¹ɲ is the symbol for a syllabic alveopalatal nasal.

Table 136 cont.

	*l	*w	*y	*i
Sumariup	l (31)	w (11)	y (18)	
	d (2)			i (26)
Alamblak	r (29)	w (11)	y (15)	i (18)
			ø/___Pal. (4)	
Kaningara	r (8)	w (7)	y (4)	i (2)
Kapriman	r (18)	w (7)	y (3)	i (6)
Karambit	r (15)	w (3)	y (3)	i (7)
Watakataui	r (5)	w (3)	y (4)	i (8)
Bisis	l (13)	w (5)	y (4)	i (6)
Mari	l (9)	w (3)	y (7)	i (4)
Bahinemo	l (14)	w (11)	y (9)	i (19)
Bitara 'E'	l (11)	w (4)	y (2)	
Bitara 'W'				
Sanio	r (19)	w (10)	y (2)	i (12)
Hiowe	r (10)	w (4)	y (2)	i (8)
Paka	r (10)	w (3)	y (2)	i (3)
Piame	r (1)			
Bikaru		w (2)		
Hewa 'P'	r (4)	w (5)	y (2)	
Hewa 'M'	r (2)			
Hewa 'K'	r (2)			

Table 136 cont.

	*iy	*i	*ə	*a
Sumariup	ɨ (8)	ɨ (16)	ə (29)	a (42)
Alamblak	i (8)	ɨ (16)	ɛ̃ (20)	a (37)
			ɨ (4)	
			o (3)	
			[ɪ] (2)	
Kaningara			a (3)	a (12)
Kapriman		u (4)	ə (6)	a (17)
			[ɪ] (2)	
Karambit				a (15)
Watakataui			o (5)	a (17)
Bisis			o (4)	a (14)
Mari				a (12)
Bahinemo		[ɨ] (10)	ə (6)	a (20)
		u/f__# (1)	[ɨ] (3)	aa (1)
			o (6)	u (1)
				o (1)
Bitara 'E'				a (8)
Bitara 'W'				
Sanio			ə (6)	a (13)
			o (3)	ə (4)
Hiowe				a (13)
				ə (3)
Paka				a (3)
Piame				
Bikaru				
Hewa 'P'				a (5)
				ə (2)
Hewa 'M'				aa (1)
				i (1)
Hewa 'K'				i (1)

Table 136 cont.

	*ay	*u	*o	*aw
Sumariup	ay (8)	u (15)	o (25)	o (10) ow (5)
Alamblak	ay (5) a/___ñ (1) [e]/___[+Cor]C (1)	u (15) ɨ/ŕ (3) o/___h (1)	o (23) ɨ/ŕ (1)	u (13)
Kaningara		u (5)		
Kapriman			o (9)	o (3)
Karambit		u (6)		
Watakataui			o (6)	
Bisis		u (6)	o (6)	u (2)
Mari		u (6)		u (2)
Bahinemo	ay (3) a (1)	u (7) ə (1)	o (8) u/#h___ (1)	u (2)
Bitara 'E'				u (2)
Bitara 'W'				
Sanio	əy (1) ə (1)		o (10) ə/#h___ (1)	o (3) u/___hu (1)
Hiowe	əy (1)	u (2) ə (1)		o (2)
Paka				
Piame				
Bikaru				
Hewa 'P'				
Hewa 'M'				
Hewa 'K'				

Based upon the second correspondences in Table 136, the proto-Sepik Hill system is likely to include at least the following:

<u>Consonants</u>					<u>Vowels</u>		
*p	*t	*ts	*k	*?	(*i)	*ɨ	(*u)
*b	*d		*g			*ə	(*o)
*f	*s		*h			*a	
*m	*n	*n ^y					
	*l						
*w	*y						

The non-central proto-Sepik Hill vowels are bracketed to indicate the uncertainty of their status as proto-phonemes. By a strict application of the comparative method the vowels listed above must be postulated; considering the difficulties in analysing the vowel systems of modern Sepik Hill languages and the doubtful status of many non-central vowels in these languages (cf. Chapter II), their status in proto-Sepik Hill must be left an open question at this time. Furthermore, the correspondence set reflecting *o occurs in the environment of a peripheral consonant or following a syllable containing [o]. There are relatively few cases where the correspondence set for *ə contrasts with that for *o in those environments. This suggests the possibility of phonetic conditioning of a proto mid-central vowel which is reflected in the correspondence set under *o.

The voiced stops were prenasalized, at least word medially. There is evidence for an earlier prenasalized series from sound correspondences in modern Sepik Hill languages. For example, there are a few irregular matchings e.g., mb - b - p; f - b - m - mb; mb - m, which have not been included in Table 136. Unexplained contrasting phonemes, simple versus prenasalized stops, occur as reflexes of *d and *g in Table 136. That is, d and nd contrast word medially in Sumariup and Alamlak; and g contrasts with ng word medially in the eastern Sepik Hill languages.

Since prenasalized and simple voiced velar stops contrast in the correspondence set reflecting *g; two proto-phonemes should be postulated by a strict application of the comparative method. We have not divided the *g set into two because of other factors which are considered below.

It is widely held that sporadic sound change does occasionally happen in spite of the generally quite regular patterns of phonetic change. Anttila explains that the way sound change spreads is the mechanism whereby irregularities occur. "Speakers adopt the changes at different times both in terms of social layers, individuals, and vocabulary sets." (Anttila 1972:86).

Apparently contrasting sets of correspondences may actually represent an ongoing sound change which has not yet been completed. There are several reasons to believe that the process of losing proto-Sepik Hill prenasalization in stops is still going on, though incomplete, in some Sepik Hill languages.

The greatest evidence of prenasalized stops in modern Sepik Hill languages is with the velars. One example of a word-initial prenasalized stop was recorded by Dye, et al. (1968) for Kaningara (ŋgant 'banana'). Alamlak has preserved word-medial prenasalization (as evidenced by allomorphic variation) in a few nouns. Note how a word-initial /g/ becomes prenasalized word-medially in cases of compounding, e.g.,

miy 'tree'
 plus ginaf 'grub'
 yields miŋginaf 'tree grub';

tir 'arm'
 plus gënha 'banana'
 yields tirŋgënha 'elbow'.

Evidence of the loss of prenasalization in Alamlak is its virtual absence with /b/. In the case of velar /g/, the allomorphic variation which prenasalizes word-medial occurrences of /g/ is not a regularly operating phonological rule. Many word-medial simple /g/'s occur, and most word-initial /g/'s are not prenasalized when they occur medially, e.g.,

wa- 'imperative prefix'
 plus grha 'dance'
 yields wagrha 'dance!'.

The evidence suggests a model in which prenasalization is first lost word-initially, and then either lost word-medially or

re-interpreted as a sequence in that position.¹

Areal typology must be considered as a check on the tentative results of the comparative method; "...typological constraints may in turn frustrate the perfectly clear results of the method..." (Anttila 1972:340). Having a voiceless stop and a voiced prenasalized stop series is a common feature of phonological systems in the New Guinea area. This factor suggests that residual evidence of prenasalization in Sepik Hill languages must be taken seriously. The contrast of reflexes [g] and [ŋg] would ostensibly lead to postulating two separate proto-phonemes by a mechanical application of the comparative method. The typological facts force one to look elsewhere for an explanation of the contrasting reflexes, inasmuch as I know of no language in Papua New Guinea that contrasts a prenasalized stop series with a simple voiced stop series as well as a voiceless stop series. Kwoma contrasts simple voiced stops and prenasalized voiced stops word medially, but the simple voiced stops are allophones of voiceless stops with which they freely fluctuate word-medially. The simple g reflexes did not derive from *k or *ʔ under similar circumstances since they contrast with reflexes of both *k and *ʔ. It is concluded then, that the contrasting reflexes g and ŋg both derive from *g([ŋg]) and the contrast indicates a sound change in progress which has not progressed as far with the velars as it has with labial and alveolar phonemes.

The proto-phoneme *ts is somewhat tenuous. It has been argued (cf. Chapter II) that the Alamlak alveopalatal series is phonetically derived from an underlying fusion of y plus an alveolar, or from an assimilation of alveolars to the alveopalatal point of articulation of juxtaposed alveopalatals. It is possible that an environmental conditioning factor similar to that operating in Alamlak at present may be found in the proto-system which will allow *t and *ts to be collapsed into one phoneme. The clear contrast between *t *ts and *s in the Bahinemo reflexes, /t/, /s/, and /h/ respectively, requires all three proto-phonemes to be kept

¹Laycock has indicated (personal communication) that word-initial prenasalization is often difficult to hear in Ndu languages.

distinct, however.

The correspondence set deriving from *ʔ is difficult to evaluate at this stage of research. Although the number of examples used to postulate the set is minimal, there is room in a proto-phonological system for *ʔ and there are no typological constraints to question its validity.

The correspondence set reflecting *n^y is nearly in complementary distribution with the *n set. Reflexes of *n^y almost always occurs next to a high vowel. Reflexes of *n do occur in that environment also, however. It is suggested that *n^y may represent a sequence of /y/ and /n/ in the proto-language.

Nine vowel sets are included in Table 136, three of which are reconstructed as the sequences, *iy, *ay, and *aw. More systematic and detailed comparisons of the distributions of these sets is necessary before a firm decision on proto-vowels will be possible.

Subgrouping

Little compelling evidence for subgrouping can be extracted from the sound correspondences.

The common development of /ʔ/ in Bisis and Mari from *h, is supportive evidence for the low-level subgrouping of these two languages proposed in the lexicostatistical analysis. The sound correspondences also confirm the low-level subgroupings of Kaningara and Alamblak. They share the development of /t/ from *s, for example. The reflexes of *p and *b present problems for placing Kaningara. Kaningara is similar to Sanio-Hiowe in merging *p and *b into /p/. Assuming, however, that Kaningara is indeed closely related to Alamblak, /p/ could have developed in Kaningara by merging the *p and *b of a proto-Alamblak/Kaningara stage. This hypothesis is concordant with the subgrouping of Alamblak and Kaningara as shown in Figures 3 and 4.

The merger of *P and *b into /b/ is common to most other eastern languages. Bahinemo, Sumariup, Yessan-Mayo, and possibly Kapriman lack a voiceless bilabial stop. Bitara 'E', Watakataui, Bisis, and Hewa 'M' have a voiceless bilabial stop, but it never occurs as a part of a correspondence set in the data used in this study. Most of the other sound correspondences also suggest a

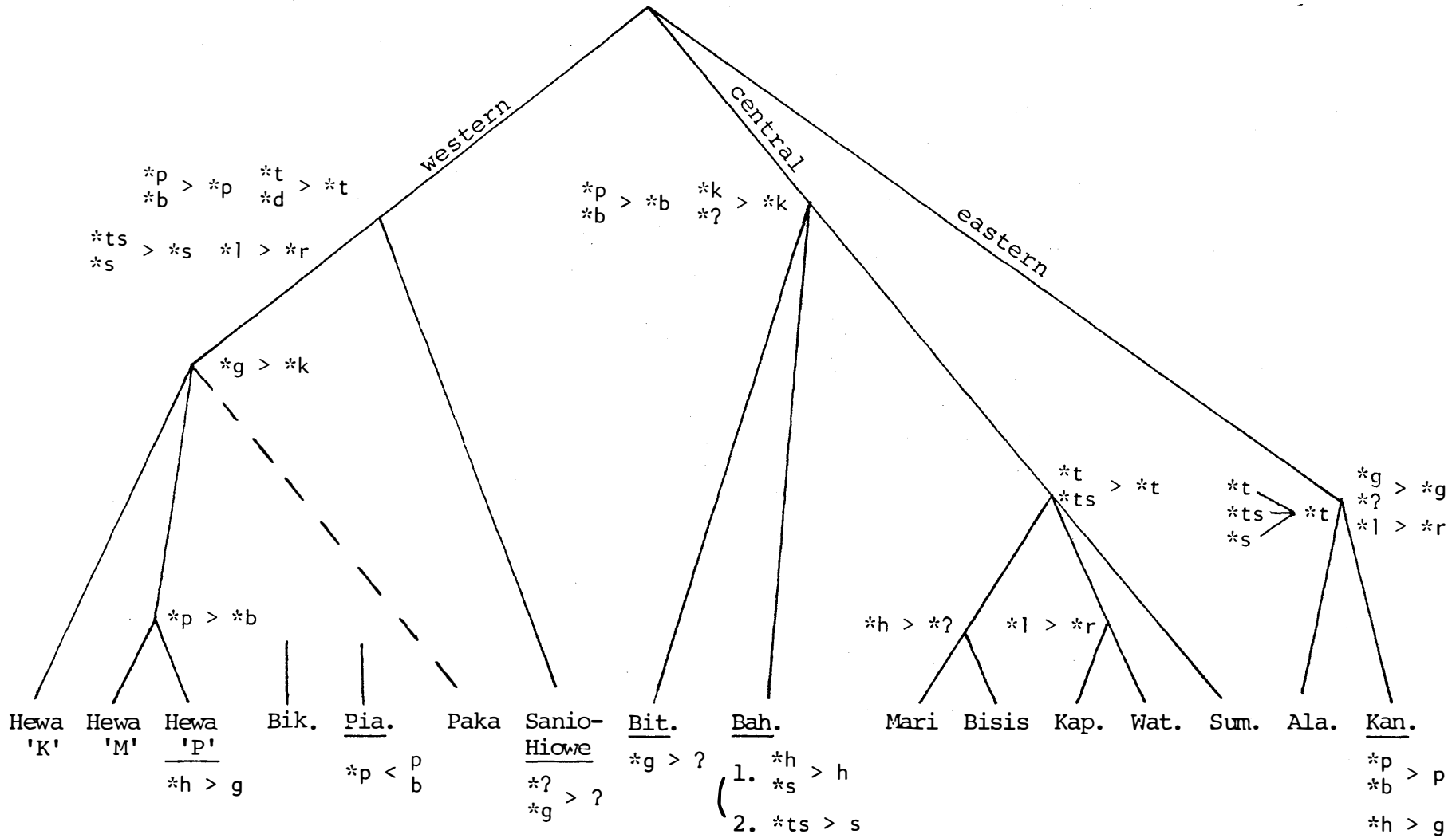
grouping of Bahinemo with the eastern languages in accordance with the results of the lexicostatistical analysis given in Table 135. Bahinemo groups with the eastern languages according to correspondence sets of *p, *b, *d, *g, *l, and, to a lesser degree of confidence, *?.

Bahinemo shares a common reflex of *ts, viz. /s/, with the western languages and has uniquely merged *s with *h to modern /h/. As indicated in Fig. 5, the merger of *ts and *s cannot have been a common innovation with the western languages and Bahinemo, because the *ts > s change in Bahinemo must follow the merger of *s and *h to /h/. Since that merger occurred first, otherwise there would be no modern /s/ in Bahinemo, the *ts > s change which followed it could not have been a merger of *ts with *s and thus it was not a shared innovation with western languages. The *ts > s change in Bahinemo, therefore, must be either an independent development or the result of contact with western languages. Since the *s > h change is unique to Bahinemo, it cannot be invoked as evidence for the central branch hypothesis in Fig. 4, which postulates a low-level subgrouping of Bitara and Bahinemo. This would be possible only if Bitara shared the *s > h innovation.

Figure 5 summarizes the most detailed subgrouping that is possible to propose on the basis of common sound changes, i.e., by assuming that shared sound changes are shared innovations. It is also the most economical in terms of involving the fewest number of independent parallel changes. Where data were insufficient to assign languages to a particular subgroup, they have been included in a subgroup with their nearest neighbours but not connected by a branch of the tree.

As is evident from Figure 5, there are conflicts between subgroupings by common sound changes. Therefore some changes must be chosen as common innovations and others as parallel independent developments. The case of greatest concern here is the placement of the centrally located Bahinemo, which groups with the eastern languages but is more or less detached from them, depending on the priority which is given to different sound changes.

Figure 5: Subgrouping Among Sepik Hill Languages by Common Sound Changes



In summary, the study of sound correspondences generally concurs with several of the preliminary findings of the lexicostatistical analysis. For much of the genetic tree, however, the sets of sound correspondences are not compelling evidence for any detailed hypothesis of subgrouping. The main differences between the lexicostatistical analysis (Fig. 4) and the subgroupings according to common sound changes involve the placement of Bitara and Bahinemo, and Alamblak and Kaningara. The sound changes favour a closer relationship between the centrally located Bitara and Bahinemo and the eastern languages than did the lexicostatistics. The placement of Alamblak and Kaningara according to sound changes (Fig. 5) does not contradict the lexicostatistical analysis, but it is strikingly different from their placement based solely on lexicostatistics (Fig. 4).

3. ISOGLOSSES

Another area which may be examined for evidence of subgrouping is that of shared lexical features. This area includes innovations in structural features in morphology, shared lexical and grammatical morphemes and semantic shifts.

Morphological changes are useful as indications of common innovations only if analogical reshaping is not suspected (e.g., analogical leveling of a paradigm). This type of evidence will be exploited to a minimal degree in this study.

Lexical changes must be evaluated with great care. Mere obsolescence of vocabulary, although technically an innovation, is no basis of subgrouping according to Hoenigswald (1963:10). Shared vocabulary may be used as subgrouping evidence. The use of that type of evidence implies that there have been common lexical innovations rather than retentions. Such an implication is often impossible to prove especially in this study where there are no higher level reconstructions with which to compare. Furthermore, one must insure that the innovation was chronologically prior to later differentiating changes, in other words, that the present situation is not the result of areal diffusion. The claim to be argued for, then, is that historically prior lexical items were lost and replaced once (as a common innovation) in a proto-language as evidenced by cognate forms in present-day

languages. It is always possible, of course, that a common lexical innovation has not been retained in every present-day daughter language; presumably, then, isoglosses of shared vocabulary cannot carry much weight unless a substantial number of isoglosses are isomorphic; the subgrouping indicated by them should also correlate with other evidence.

In this section we will consider three types of shared features in an effort to form a subgrouping hypothesis for the Sepik Hill language group. We will first examine the geographical distribution of cognate lexical items. Secondly we will do the same for cognate grammatical morphemes. Finally we will consider some evidence from morphological changes which bears on the constitution of the primary east-west split among Sepik Hill languages.

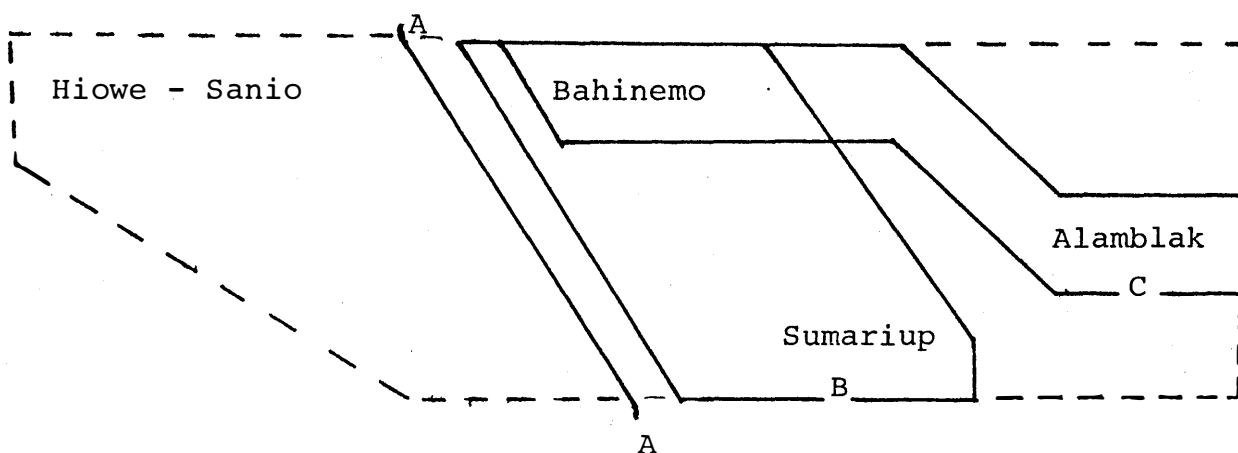
The isogloss approach is a refinement of previous analyses. The results of two sets of evidence, lexicostatistics and sound changes, have produced genetic trees with a few low-level subgroupings related by two or three high-level subgroups. Further confident subgrouping has not been possible. Anttila (1972:304) suggests that isogloss mapping is particularly pertinent under such circumstances, "an isogloss map gives much more information because it spells out the overlapping items, and isogloss bundles indicate the relative strength of boundaries."

The isogloss diagrams in this section relate the languages in the diagram spatially in a general correspondence with the present geographical distribution of the languages. Bundles of isoglosses are indicated by thick lines on the diagram. In cases where the entire diagram is divided into a few cognate sets, the isoglosses will segment the diagram into as many sections. In other cases, an isogloss will encircle a group of languages indicating that the languages within the isogloss share cognates for the morpheme but languages outside the isogloss do not share cognates among themselves for that particular morpheme. A dotted section indicates an uncertain boundary between cognate sets.

a. SHARED LEXICAL ITEMSHigher-level Subgrouping

Figure 6 represents data which, from among the Sepik Hill languages, were available only for Sanio-Hiowe¹, Bahinemo, Sumariup, and Alamblak. Figures 6 and 7 group Bahinemo with an eastern Sepik Hill subgroup.

Figure 6: Eastern Subgrouping vs. Sanio-Hiowe

Definitions of Isoglosses for Figure 6Isogloss Bundle A

22. əfi (San.) | kiɣ tən (Sum.), kindən (Ala.), kai (Bah.) 'left hand'
58. roʔu (San.) | nəmeaf (Sum.), nēm (Ala.), nīm (Bah.) 'gums (of mouth)'
97. əfəi (San.) | lahe (Sum.), rahem (Ala.), la (Bah.) 'cross-cousin'
125. sawi marui (San.) (Taro wild) | bika (Sum., Ala.) 'elephant ear Taro' bika-bu (Bah.) (Taro-sprout).
138. enə-hotowi (San.) (banana-tree-trunk) | gənɨ (Sum.) gəni (Bah.) 'banana tree', gən-m (Ala.) (banana-classifier).
149. tərife (San.) | yohita (Sum., Ala.), hu (Bah.) 'branch'
176. təmaye (San.) | gay (Sum., Ala., Bah.) 'white cockatoo'
187. ənəri (San.) | nungu (Sum.), nu[ŋ]g[^u] (Ala.), ngou (Bah.) 'sand'
201. hanih ənəhano (San.) | fənɨ (Sum.), fənhu (Ala.), ifinɨl (Bah.) 'lightning'

¹The Sanio dialect is generally used to represent Sanio-Hiowe.

212. hawhawe (San.)| yafəsiha (Sum.), yafətha (Ala.), yafsa (Bah.)
'spirit, shadow, reflection'
294. itro (San., Hio.)| toni (Sum.), tone (Ala.), oneba (Bah.)
'run'
303. təʔənəh[e]y (San.)| niŋgi (Sum., Ala.), niəy (Bah.) 'laugh'
308. uri (San.)| kə (Sum.), kə(k) (Ala.), ki (Bah.) 'vomit'
314. həmesi (San.)| gɪlifa (Sum.), gɪrfay (Ala.), gəfa (Bah.)
'snore'.
320. ti (San., Hio.)| ki (Sum., Ala., Bah.) 'bind by wrapping
around'
386. tiaʔo (San.)| sawəne (Sum.), tawore (Ala.), hw[ɔ] (Bah.)
'in return'

Isogloss Bundle B

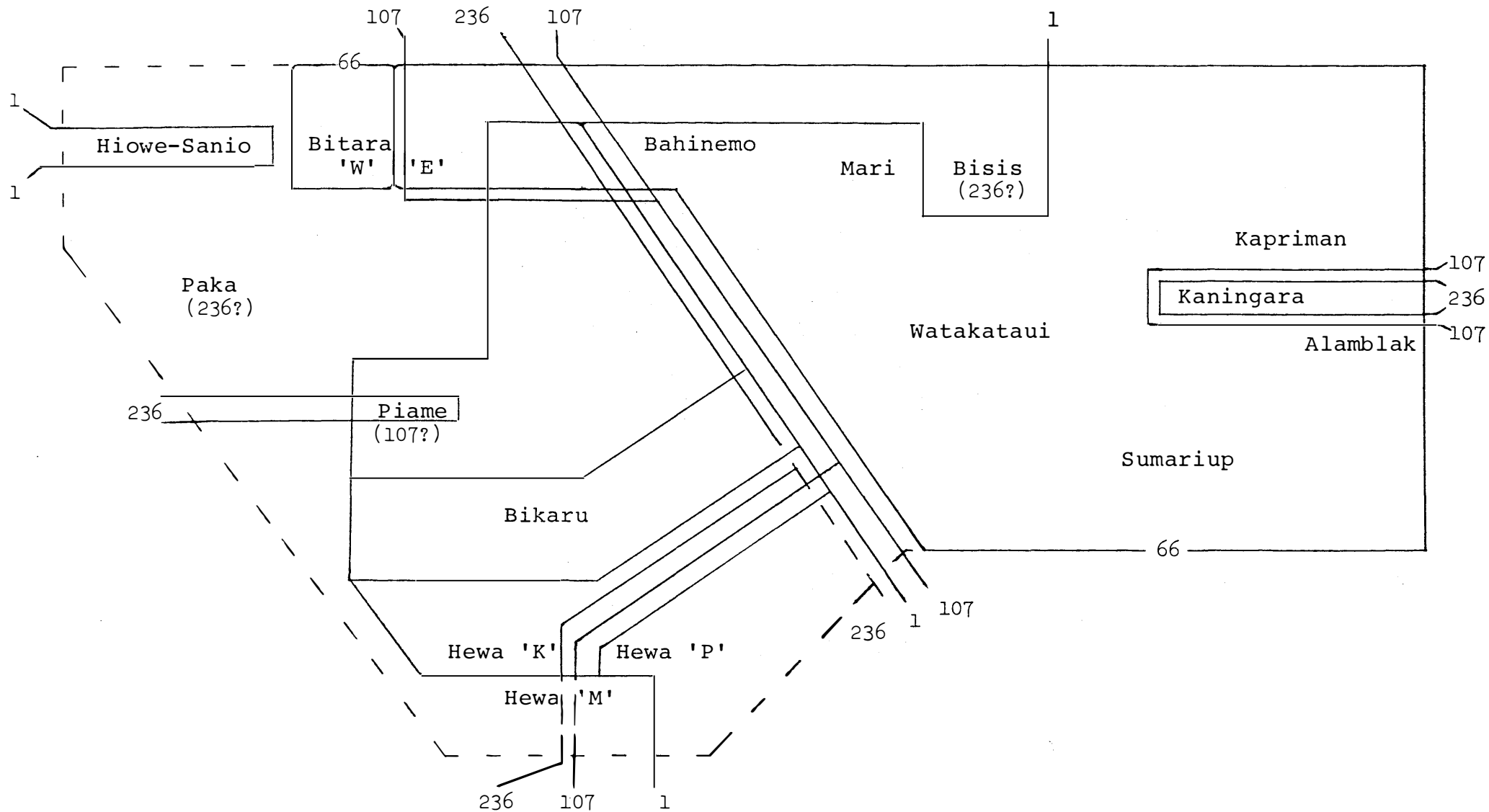
17. gɪlɪ (Sum.), gɪ (Bah.) 'little finger'
69. nuŋgɔfa (Sum.), niŋgifi (Bah.) 'vein'. residue: niŋef (Ala.),
niŋifi (Kwo.), nəhəwi (San., Hio.)
129. boulə (Sum.), bilal (Bah.) 'river reed'
280. tifiha (Sum.), mitifa (Bah.) 'afraid'. residue: tawe (San.,
Hio.)
327. boke 'cut (firewood)'
374. dəy (Sum.) 'there', u-da (Bah.) (distant-demonstrative)
384. ahuna (Sum.), həyna (Bah.) 'to spear'

Isogloss Bundle C

15. boha-pɪynaf (Ala.) (middle-appendage), bonafo (Bah.) 'middle
finger'
74. gu (Ala.), k[ɔ] (Bah.) 'corpse'
75. ŋa (Ala.), ina (Bah.) 'urine'
81. f[^o]h[^o] (Ala.), fo (Bah.) 'wound'
267. bibika (Ala.), bibi (Bah.) 'strong'
300. mətita (Ala.), oətita (Bah.) 'to smell, sniff'
- 319(a). may (Ala.), mo (Bah.) 'say'. residue: piha (Ala.),
bahe (Bah.), 'talk'; bilow (Sum.), pəri (San., Hio.) 'talk'
335. šuh (Ala.), su (Bah.) 'fall'

Figure 7 supplements Fig. 6 with data which were available for most of the other Sepik Hill languages as well. Cognate sets for each lexical item are indicated on the diagram.

Figure 7: Eastern (including Bahinemo) vs. Southwestern Subgroups



Definitions of Isoglosses for Figure 7

1. dəbahəba (Sum.), rpa (Ala.), dəba (Kap., Mari, Bah.), dəbah (Wat.), ndopa (Kan.), dædæ (H-P), tabak (Bis.), tobaʔa (Bit.), tapukari (Paka), təbakəri (H-M), 'one'.
66. sibiy (Sum.), tipi (Ala.), təp[ɪ] (Kan.), s[ɪ]befa (Kap.), s[ɪ]b[ɛ]h (Wat.), s[ɪ]b[ɪ]ka (Bis.), həbəi (Bah.), səbi (Mari, Bit. 'E'), 'bone'.
107. ima (Sum., Wat., Bah.) 'man, person', yima (Ala., Kap.) 'person', nima (Bis.), ɲa (Mari) 'man' | mane (Bit. 'W') 'boy', meni ~ mani (Paka) 'male?, man', məni (Hio.) 'man, person', mumani (Bik.) 'boy?'¹
236. (h)ufa (Sum.), ufa (Kap., Mari, Wat.), wufa (Bah.), yufa (Ala.), nɛfiufalo^ə (H-P)?, | wiyaba (Bit.), wiapə (San.), wapi (Bik.), wiabe (Pak), 'name'.

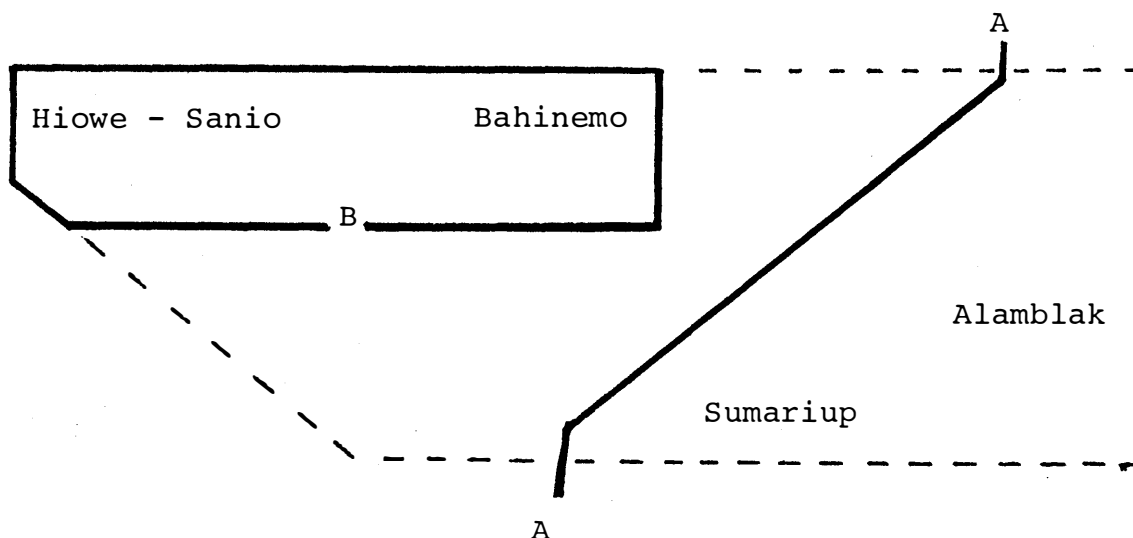
Figure 8 represents data which, from among the Sepik Hill languages, were available only for Sanio-Hoiwe, Bahinemo, Sumariup and Alamblak. Figures 8 and 9 group Bahinemo with the western Sepik Hill languages.

¹The two sets in isogloss 107 may be the result of a morphological change in which either the western form, e.g., məni (Hio.) or the eastern form, e.g., nima (Bis.), has metathesized the syllables of the proto-form.

Considerable semantic shifting has occurred among the set of words which designate notions such as 'man', 'male', 'person', 'boy', etc. Thus nima (Bis.) for 'man' may be the result of a semantic shift rather than the metathesis of syllables considering that the Sumariup form nanima 'friend' could be the source of the Bisis form for 'man'. Semantic shifts are illustrated by two more sets of cognates which roughly correlate with isogloss 107 as follows:

w[e]yag (Sum.), 'male human', w[e]yagəh (Wat.), 'teenage boy', wiyagə (Kan., Kap.), 'man' | lu(won) (Bit. 'W'), lu (San.), 'man', luweni (Paka), 'person'?

Contamination in borrowing or compounding may explain a deviant Alamblak form in this semantic field. Namely, in damyag 'teenage boy', dam may be related to Yessan-Mayo tama 'man' leaving the second part, yag, to be related to similar forms for 'man', 'male' or 'teenage boy' in nearby languages, such as weyagəh 'teenage boy' in Watakataui.

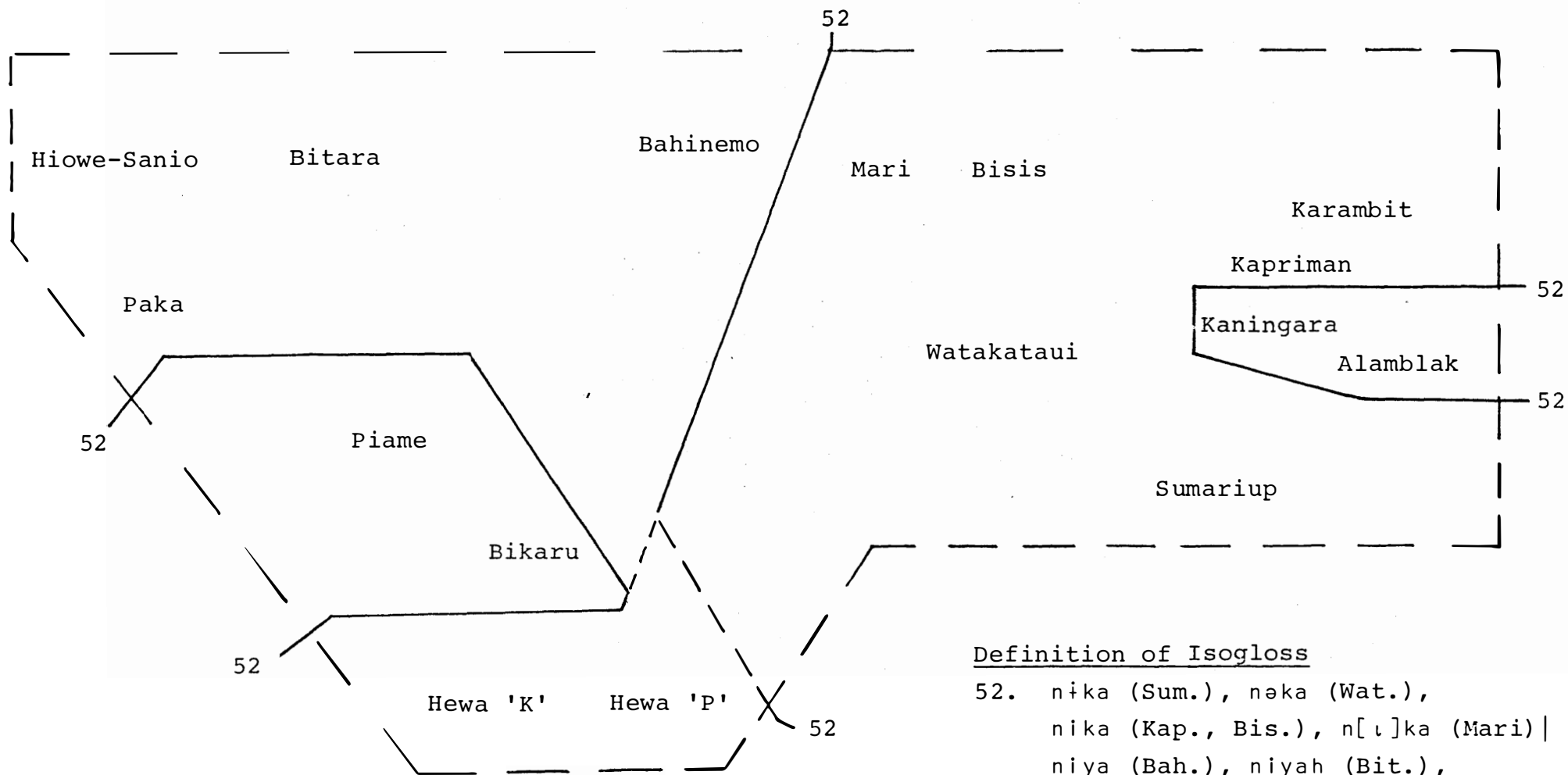
Figure 8: Sanio-Hiowe and Bahinemo vs. Sumariup and AlamblakDefinitions of Isoglosses for Figure 9Isogloss Bundle A

67. miə (San., Bah.) | kakiray (Sum.), kikiray (Ala.) 'rib'.
95. aite huwə (San.) (*father guardian*), hoa (Bah.) 'guardian' | dayja (Sum.) 'guardian', daja (Ala.) 'father (term of address)'.
106. aite papə (San.), babu (Bah.) 'father-in-law' | mašoh (Sum.) 'father-in-law', match(-em) (Ala.) (*parent.in.law-classifier*).
147. yaʔarə (San.), yakɨ (Bah.) | finiki (Sum.), fiñik (Ala.) 'Banyan tree'.
253. mei (San.), yəmwəy (Bah.) | yubəsəse (Sum.), yubəta(y) (Ala.) 'swollen'.
256. foroʔo (Hio.), hoful (Bah.) | dəmti (Sum.), dēmt (Ala.) 'dry'.
339. howe (San.), howəy (Bah.) | yoh (Sum., Ala.) 'weave (such as a string bag)'.
365. piyə (San., Hio.), biya (Bah.) | wae (Sum.), wai (Ala.) 'what'.

Isogloss Bundle B

48. wənəʔou (San.), wənkiu (Bah.) 'back of the head'.
276. asi (Hio.), ase (Bah.) 'hungry'.
326. rinⁱ/e (San., Hio.), ina (Bah.) 'to scratch'.
328. to (San., Bah.) 'cut (as of meat)'.
373. saro (San.), a-da (Bah.) 'here'.

Figure 9: Western (including Bahinemo) vs. Eastern Subgroup



Definition of Isogloss

52. nika (Sum.), neka (Wat.),
 nika (Kap., Bis.), n[ɪ]ka (Mari)|
 niya (Bah.), niyah (Bit.),
 nihe (San., Hio.), nihe (Paka),|
 nio (H-P, H-K) 'eye'

Figure 9 supplements Figure 8 with data available from most of the Sepik Hill languages. The dotted lines in Figure 9 indicate that the forms for Hewa 'K' and Hewa 'P' may be assigned as cognate with either the western or the eastern group. The placement of these particular forms are not significant to the discussion here.

Like the previous two diagrams, Figures 8 and 9 also present evidence for an east-west division. Figures 8 and 9, however, allocate Bahinemo in the western group rather than in the eastern group. Comparing the two groupings, Bahinemo shares seven lexical cognates with Sumariup, eight with Alamblak, and twenty-one with Sumariup, Alamblak and other eastern languages. Bahinemo shares thirteen lexical cognates with Sanio-Hiowe, and one with Sanio-Hiowe and other western languages.

Hoenigswald warns that the number of isoglosses are not to be added together in order to give preference to the more numerous isoglosses. One legitimate shared innovation is sufficient to establish a subgroup, and if legitimate but conflicting (overlapping) isoglosses occur, the use of the family tree to depict the relationship is not strictly adequate (Hoenigswald 1966:8). In that light these isoglosses must be critically evaluated and if legitimate overlapping of shared innovations occurs, the situation may reflect an original dialect chain within which these isoglosses were distributed.

Anttila (1972:304), on the other hand, considers it legitimate to give more weight to larger bundles of isoglosses for subgrouping purposes at least in cases where priority cannot nonarbitrarily be assigned to one isogloss (bundle) over another. For the situation at hand we may accept the evidence of larger-versus-smaller isogloss bundles when the isoglosses involved all seem to be of comparable importance.

Even if the greater number of isoglosses are given priority, Bahinemo can be only marginally placed in the eastern subgroup since a substantial number of isoglosses group it with Sanio-Hiowe. Nevertheless, that Bahinemo be placed in the eastern subgroup agrees with most of the results of the lexicostatistical analyses and sound change comparisons in previous discussions.

If Bahinemo is tentatively so placed, the position of Bitara becomes more uncertain. None of the evidence agrees thus far

with regard to the position of Bitara. The lexicostatistical analysis grouped Bitara with Bahinemo. The patterns of sound changes (cf. Figure 5) did not confirm the Bitara-Bahinemo sub-grouping, but it did place Bitara with the eastern languages. This was done with the allowance of one sound change which Bitara shares with Sanio-Hiowe. Furthermore, by Figure 7, only one out of four isoglosses includes Bitara 'E' with Bahinemo, whereas two place Bitara 'W' and 'E' with the western languages. The conflicting evidence suggests that the position of Bitara and possibly also that of Bahinemo have been obscured by undetected borrowing and/or an early contact and diffusion period in a dialect chain before discrete language boundaries developed. Where it proves impossible to give priority to one set of evidence over another it is best to leave the tree with a multiple splitting node at that point, and then to provide isoglosses to clarify the relationships involved. This does not mean, however, that a dialect chain is necessarily the correct historical explanation. It simply means that given the potentials of the various historical approaches and the potential of the data available, this is as definite as we can be at this time.

To summarize, a synthesis of the evidence thus far suggests three first-order subgroupings (as suggested by the lexicostatistical evidence in Figure 4). The composition of the subgroups differs from Figure 4, however, in that Bahinemo is moved to the eastern subgrouping, leaving Bitara as the modern representative of the central branch. Bitara appears to reflect evidence of a dialect continuum in which a central dialect of proto-Sepik Hill shared phonological, lexical, and grammatical features with both western and eastern dialects.

Lower-level Subgrouping: Eastern Sepik Hill

Isoglosses of lexical items shared by eastern Sepik Hill languages presents a very scattered picture which offers little confirmatory evidence of lower-level subgroups suggested thus far.

The greatest correlation of the evidence of lexical isoglosses with evidence from lexicostatistics and patterns of sound changes is the subgroup involving Alamlak and Kaningara. Isoglosses of five lexical items distinguish these two language from other

languages in the area. The set of cognates is as follows:

- (13) mima-piy-naf (Ala.) mama-nabi (Kan.) 'thumb'
 (52) ñi[ŋ]ga (Ala.) ni[ŋ]gi (Kan.) 'eye'
 (116) kah (Ala.) kəgɪ (Kan.) 'fire'
 (118) bu-pa (Ala.) (*rain-derivative of*) pu (Kan.) 'water'
 (254) kah-et (Ala.) kəgɪ-r kəgɪ-r (Kan.) 'hot'

The evidence for subgrouping among the other languages of the eastern subgroup is either inconclusive or contradictory. The lexicostatistical evidence suggests conflicting subgroupings which gives the following chaining effect:

Mari → Bisis → Kapriman → Watakataui ← Sumariup

Lexical isoglosses do not confirm any subgrouping among these languages either.

Lower-level Subgrouping: Western Sepik Hill

As among the eastern languages, isoglosses of lexical items offer little evidence of lower-level subgrouping among the western languages. The grouping of Hewa 'M', Hewa 'P', and Hewa 'K', as suggested by sound correspondences (cf. Fig. 5) correlates with at least three isoglosses. One other isogloss combines Hewa 'M' and Hewa 'P', whereas no data was available for comparison with Hewa 'K'. These are listed below.

- (24) undumə (Hewa 'P'), udumə (Hewa 'M'), dumə (Hewa 'K') 'elbow'
 (53) afi (Hewa 'P', Hewa 'M'), ɔfi (Hewa 'K') 'nose'
 (318) lawə (Hewa 'P'), labu (Hewa 'M'), lofu (Hewa 'K') 'sit'
 (334) tania (Hewa 'P'), tane (Hewa 'M') 'give'

There is some evidence that Sanio-Hiowe and Paka may form another subgroup. Three isoglosses which join these two languages in contrast to other languages.¹

¹Conflicting isoglosses combine these with other languages in various ways e.g., San.-Paka-Bik., San.-Paka-Pia., San-Bit.-Pia. (2 isoglosses), San.-Paka-Bit-Bik., etc.

b. SHARED GRAMMATICAL MORPHEMES

Five isoglosses of grammatical morphemes include Bahinemo in the eastern subgroup, and two include Bahinemo in the western subgroup.

Bahinemo shares cognates with other eastern languages as follows:¹

- (377) l- (Bah.), ri- (Ala.), lewoh- (Sum.) '*laterally*'.
 (379) -hofu (Bah.), -t[ɨ]hëf (Ala.), sɨhəfə (Sum.) '*resident of*'.
 (374) u- (Bah., Ala.) '*far*'.
 (372) -o ~ -ho (Bah.), -ʔo (Bis.), -o (Wat.), -ho (Kap., Sum),
 -(h)o ~ -oh (Ala.) '*marker of possessor*'.
 (434) -fa (Bah., Bis.), -ba (Wat.), -nifa (Kap.), -pa (Kan.,
 Ala.), -ba (Sum.) '*derivative of*'.

On the other hand, Bahinemo shares cognates with Sanio-Hiowe in the west for the following isoglosses:

- (432a) fu- ~ fe- ~ fi- (Bah.), f(u)- ~ -rə (Hiowe) '*imperative*'.
 (432b) fa- (Bah.), -fa (Hiowe) '*jussive*'.

Bahinemo and Sanio-Hiowe share the feature of marking nouns for plural number with other Sepik Hill languages. These two languages are distinct, however, in not marking nouns for any other number category or gender (e.g., singular, masculine, feminine, or dual) whereas all of the Sepik Hill languages east of Bahinemo mark these other categories on nouns with cognate suffixes. (Data are either not available or not clear for comparison with Bitara, Paka, Piame, Bikaru, Hewa 'M' and Hewa 'K'.)

In addition to the above isoglosses which indicate a first-order east-west split, four isoglosses verify a lower-level subgrouping of Alamlak with Sumariup (by three isoglosses) and Alamlak with Kaningara (by one isogloss).

¹Data were available for isoglosses (377), (379), and (374) only from Sumariup, Alamlak, Bahinemo, and Sanio-Hiowe from among the Sepik Hill languages.

(382) -i (Ala., Sum.) 'co-ordinate noun phrase marker'.

(424) -rfë (Ala.) de-...-f (Sum.) 'negative/irrealis verb suffix in immediate past tense forms'.

A future or polite imperative tense-aspect has been documented for Alamblak, Sumariup, and Bahinemo. Lewis and Lewis (1972) do not report such a form for Sanio-Hiowe. The Alamblak and Sumariup forms are cognate but Bahinemo shows an irregular ? as follows: -twa (Ala.), -sa (Sum.), -?V (Bah.)¹ 'future/polite imperative tense-aspect marker'.

(422) -kah (Ala.), kaha (Kan.) 'negative/irrealis in present tense forms'.²

In summary, the isoglosses of lexical and grammatical morphemes verify an east-west division among the Sepik Hill languages. The positions of Bitara and Bahinemo remain somewhat indeterminate as they occupy a central position midway between the two major groupings both linguistically and geographically. The cumulative evidence thus far slightly favours grouping these two languages with the eastern subgroup. Isoglosses further substantiate the low-level relationships between Alamblak, Kaningara, and Sumariup. Lexical isoglosses correlate with other evidence for two western subgroups, i.e., the Hewa languages on the one hand, and on the other hand a subgroup composed of Paka and Sanio-Hiowe. No isoglosses of grammatical morphemes substantiate these subgroups, however.

¹The Bahinemo form -?V indicates that the last vowel of the verb root is repeated in the tense-aspect suffix.

²The Kaningara negative word kaha is a free-form negator preceding the verb in the clause. There are no irrealis markers in negative verbs in Kaningara. The free-form negative particles in Alamblak also precede the verb but are non-cognate with Kaningara kaha. The present tense form of the negative/irrealis marker in Alamblak verbs does appear to be cognate with the Kaningara form here. The h-h correspondence is not established as a regular correspondence between the two languages, however, which indicates it is possibly a borrowing.

c. MORPHOLOGICAL CHANGE

There is a pattern of morphological change which is suggestive of an east-west division among the Sepik Hill languages. In general the western languages exhibit the loss of one or more morpheme-final syllables in contrast to the eastern languages. The change appears to be irregular according to the data at hand although a regular phonetic conditioning in terms of stress-pitch patterns may turn out to be the explanation for the loss of particular syllables.¹

Isoglosses of short-versus-long forms of cognate morphemes clearly place Bahinemo with the western languages. The line dividing eastern and western languages does not always coincide, however; Watakataui and Mari, languages which are clearly a part of the eastern subgroup by all other evidence, group with the western languages for one cognate set and with the eastern languages for two cognate sets (cf. Table 137). Bahinemo is not always grouped with the western languages on this basis either (cf. Table 138). A few examples of isoglosses are given in Tables 137 and 138. Dashes in the tables indicate that missing forms are non-cognate with the set listed and blank spaces indicate that data were not available for comparison.

¹Lewis and Lewis (1970) indicate that stress occurs on the first syllable of the word in Sanio-Hiowe. Stress typically occurs on the penultima in Sumariup and Alamblak, however, which may explain the retention of final syllables in those languages. Dye and Dye (1969) give evidence for phonemic tone-stress in Bahinemo. Thus tone-stress must be specified for each word in Bahinemo and may occur on any syllable in the word.

Table 137: Isoglosses of Long and Short Forms

		'head'	'flesh'	'path'	'pig'
Eastern Languages	Sumariup	[tɔɣu-s]	[nəmɪɣa-ba-m]	--	[pəɣ]
	Alamblak	--	[nənəɣə-pa-m]	[yɪɣot ⁱ oɣa-t]	[pəɣ]
	Kaningara	--		[yuwa-t]	[pəɣ]
	Kapriman	[togo]		[ago-t]	} [pəɣ]
	Karambit	[togu]		[aɣot ⁱ o-m]	
	Bisis	[tuʔu-s]		[ʔato]	[pəʔo]
	Mari	[toʔu-s]		[aʔotɪ-s]	[pə]
	Watakataui	[togo]		[yagato]	[pə]
Western Languages	Bahinemo	[tu]	[nim]	[yo]	[pə]
	Bit. 'E'	--	[nəmka]	[yow]	--
	Bit. 'W'	[tu]			} [pə]
	Sanio	[tu]			
	Hiowe	[tu]			
	Paka			[yo]	[pɪ]
	Piame			[yo]	[pə]
	Bikaru			[yu]	--
	Hewa 'P'			[yu]	[uiθa]

Isoglosses included in Table 138 group Bahinemo with Sanio-Hiowe most of the time but with Alamblak and Sumariup in one clear case.

A difficulty in interpreting the data in Tables 137 and 138 is the way in which they conflict with some of the other subgrouping evidence. Up until now most of the evidence has slightly favoured placing Bahinemo in the eastern subgroup. The general pattern of morpheme-final segment or syllable reduction, however, associates Bahinemo with western Sepik Hill languages. If this feature of morphological change is assumed to be of primary importance for subgrouping, then many shared lexical and grammatical items and shared phonological changes between Bahinemo and eastern languages will have to be attributed to diffusion or independent parallel developments. A simpler solution, which is adopted here, attributes similar patterns of morphological shortening to the

Table 138: More Isoglosses of Long and Short Forms

		<i>charcoal</i>	<i>grub</i>	<i>wound</i>	<i>strong</i>	<i>left hand</i>	<i>middle</i>	<i>little</i>	<i>fall</i>	<i>flower</i>	<i>afraid</i>	<i>nest</i>	<i>lightning</i>
								<i>finger</i>					
Western languages	Sanio	kəɾə	ʔi			-	-	-	-	su	-	-	-
	Bahinemo	kɪ	gi	fo	bibi	kai	bo	gɪ	su	hofa	mitifa	wihi	ifɪnɪl
Eastern languages	Alamblak	kɪr-pa	gi-naf	f ^[°] h ^[°]	bɪbɪka	kindən	boha	-	ʃuh	tifa	-	wɪʃiy	fɪnhu
	Sumariup	kɪlkɪmoha	ginaf	-		kɪytən	-	gɪlɪ	-	-	tɪfɪha	w[u]ʃi	fənɪ

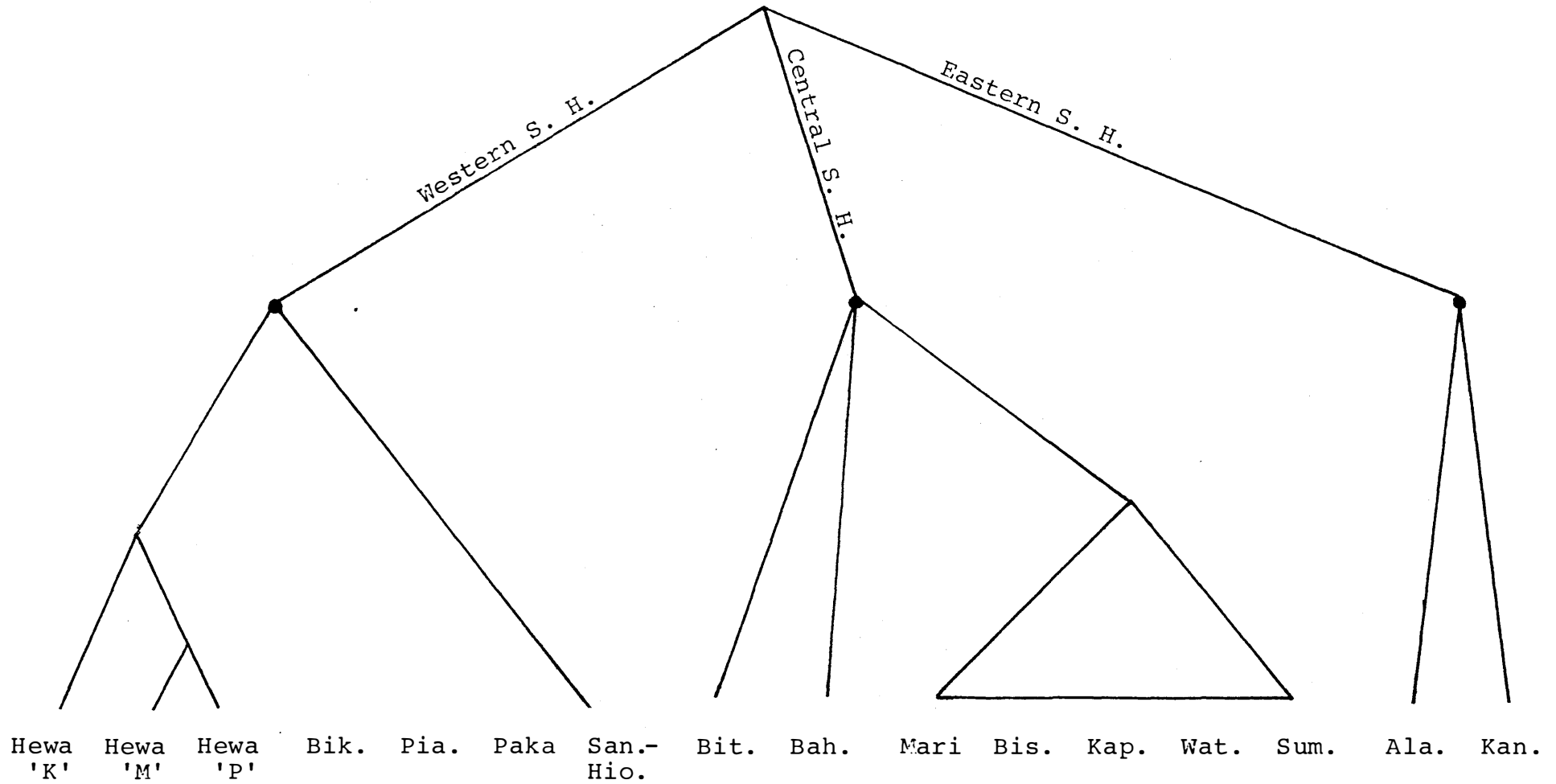
diffusion or independent development of the same or similar feature(s) which caused those patterns of change. The data are not complete enough to satisfactorily test this conclusion. One possible phonological cause for this pattern of morphological change which could have arisen in Bahinemo either by diffusion or by an independent development is mentioned in footnote 1 on p.513.

4. SYNTHESIS

Five types of evidence has been examined in an effort to establish subgroups among Sepik Hill languages, viz., lexico-statistics, sound changes, isoglosses of lexical morphemes and grammatical morphemes, and morphological change. All of the evidence indicates that the present day Sepik Hill languages constitute a Stock which comprises two or three Families. The lexicostatistical study in this work and isoglosses of grammatical morphemes generally associated Bahinemo with the Eastern Sepik Hill Family. Evidence from morphological change associated Bahinemo with the Western Sepik Hill Family. Evidence from the lexicostatistical figures from Dye, et al., sound changes, and isoglosses of lexical morphemes suggested a triple split from Proto-Sepik Hill, with Bitara and usually Bahinemo also occupying a central position. The subgrouping by shared sound changes associated Bitara and Bahinemo with Mari, Bisis, Kapriman, Watakataui, and Sumariup in the Central Family.

The patterns of sound changes constrain the analysis to a three-way first-order split. There are several plausible genetic trees which could be drawn within that general framework. As is indicated by the summary of the evidence, it is the positions of Bitara and Bahinemo which are difficult to determine. The synthesis suggested below resembles Figure 5 (Subgrouping by Common Sound Changes) more than any other model of subgrouping proposed thus far.

Figure 10: Subgroupings in the Sepik Hill Stock - A Synthesis



The changes in Figure 10 from Figure 5 involve simplifying the hypothesis by reducing the number of proposed intermediary stages. The *l > *r change which defined a Kapriman-Watakataui subgroup is not significant evidence on its own to postulate a subgroup. Data are insufficient to adequately test both that subgroup and the Mari-Bisis subgroup defined by the *h > *ʔ change.

This model reflects most of the findings of the lexicostatistical evidence. Bitara and Bahinemo remain in a fairly central position. Bahinemo is as far removed from Sanio as it is from Alamlak, which is reflected in the Dye, et al. figures. Bitara's higher percentage with Sanio-Hiowe is attributed to diffusion between those geographically proximal languages. Figure 10 also reflects the chaining relationship between Mari, Bisis, Kapriman, Watakataui, and Sumariup which was indicated by the lexicostatistical figures.

The lexicostatistics indicated a close connection between Alamlak and Sumariup which may not appear to be reflected by Figure 10. The detached position of Alamlak and Kaningara in relation to the Sepik Hill languages in general, however, reflects nicely the Dye, et al. figures. On an overall average, Alamlak and Kaningara show lower percentages of shared cognates with other Sepik Hill languages than do other individual SH languages. Sumariup, on the other hand, shows the highest average of shared cognates with other SH languages, which seems to indicate that modern Sumariup reflects more of the features of Proto-Sepik Hill than does any other single Sepik Hill language. If that is true, then the apparent distance between Alamlak and Sumariup in Figure 10 is greater than the actual differentiation between these two languages and therefore the high percentage of cognates shared by them is still possible to explain in terms of Figure 10. Borrowing between these two geographically proximal languages also has undoubtedly inflated the lexicostatistical figures, as suggested in the section on lexicostatistics.

Figure 10 fairly well represents the picture as it is suggested by isoglosses of lexical items. Isoglosses offer little evidence of subgrouping other than a major east-west division with Bahinemo slightly favouring an affinity with eastern languages.

Alternative Models

Other subgrouping hypotheses are possible to formulate. The isoglosses of grammatical morphemes, for example, are evidence for a closer relationship between Bahinemo, Alamlak, and the other eastern languages. The nature of this preliminary study, however, does not merit an extended discussion of alternative hypotheses. We therefore proceed to a discussion of wider relationships in the Sepik area.

E. WIDER RELATIONSHIPS IN THE MIDDLE SEPIK AREA

There are three basic problems which will be considered in our investigation of the wider relationships of the Sepik Hill languages within the Sepik area. The first problem is to identify other languages which are related to the Sepik Hill languages. Secondly, we will look for evidence that confirms the internal unity of the Sepik Hill Stock. Thirdly, we will look for evidence of subgrouping relationships between the Sepik Hill Stock and other groups of languages in the region.

Concerning the first problem, we will confine our investigation to confirming the claim that the Sepik Hill languages are genetically related to Yessan-Mayo, (Tama Family), Kwoma (Nukuma Family) and Iatmul (Ndu Family). While Laycock (1973) and Conrad and Dye (1975) all postulate still wider relationships which include the Sepik Hill languages, this limited study cannot evaluate those claims. Questions of the internal unity of the Sepik Hill Stock and subgrouping relationships with other families will be discussed with reference to evidence from the three above-mentioned languages serving as representatives of their respective families. Alamlak, Sumariup, Bahinemo, and Sanio will be the primary representatives of the Sepik Hill languages with supplemental data from other Sepik Hill languages being used where available.

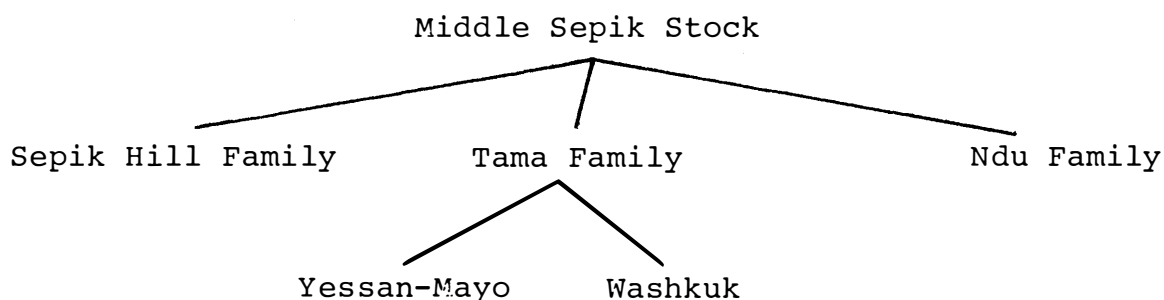
1. LEXICOSTATISTICS

Dye, et al. (1968:153) indicated that the Sepik Hill languages were related to Yessan-Mayo and the Ndu Family languages by percentages of about 15% and 10% to 15%, respectively.

Conrad and Dye (1975) include Washkuk (Kwoma) in a comparison with Sepik Hill, Yessan-Mayo, and Ndu languages (cf. Table 134,

p. 477). They postulate three Families of a Middle Sepik Stock as follows:

Figure 11: Middle Sepik Relationships (Conrad & Dye, 1975)



A lexicostatistical comparison, by the author, of four Sepik Hill languages with Yessan-Mayo, Kwoma, and Iatmul showed general agreement with the Conrad-Dye interpretation. Table 135 is reproduced here as part of Table 139.

Table 139: Lexicostatistical Comparison of Seven Middle Sepik Languages

	Sepik Hill Stock				Tama Family	Nukuma Family	Ndu Family	Cognate percentages
	Sumariup	Alamblak	Bahinemo	Sanio	Yessan-Mayo	Kwoma	Iatmul	
Sumariup		59.9	31.1	19.1	12.5	10.6	8.0	
Alamblak	384		29.4	15.9	13.6	11.7	8.0	
Bahinemo	354	364		21.1	12.7	11.3	6.5	
Sanio	329	334	323		9.7	8.9	4.8	
Yessan-Mayo	376	382	353	331		15.2	6.9	
Kwoma	376	383	353	327	376		6.0	
Iatmul	376	383	351	330	378	381		

number of items compared

The percentages on Table 139 indicate that all of the languages in the study are genetically related. Yessan-Mayo and Kwoma share more cognates with each other than they do with the Sepik Hill languages. The Sepik Hill languages, in turn, are more closely related to each other than they are to the non-Sepik Hill languages.

2. SOUND CORRESPONDENCES

The data are too restricted to attempt any serious higher-level subgrouping among the Middle Sepik language Families on the basis of sound correspondences. There are only a few correspondence sets which are well enough established which allow tentative generalizations to be made. Sepik Hill, Yessan-Mayo and Kwoma group together in contrast to Iatmul according to two sets of correspondences:

- *k (SH) - k (Y-M) - k (Kwo.) - g (Iat)
 *m (SH) - m (Y-M) - m (Kwo.) - n (Iat).

Sepik Hill and Kwoma group together in contrast to Yessan-Mayo and Iatmul according to the following correspondence:

- *ts (SH) - s, č (Kwo.) - t (Y-M) - t (Iat.).

If nothing else, these sets do confirm the lexicostatistical evidence that these languages are indeed genetically related.

3. ISOGLOSSES

The evidence thus far agrees that the languages under study are genetically related. The evidence allows for several interpretations of how they are interrelated. We will now proceed to examine the evidence from isoglosses of lexical and grammatical morphemes.

a. ISOGLOSSES OF LEXICAL MORPHEMES

Isoglosses of lexical morphemes also confirm that the language families under study are all genetically related. The evidence also supports the internal unity of the Sepik Hill Stock and there is no significant evidence of subgrouping which includes the Sepik Hill Stock among the language groups in our study.

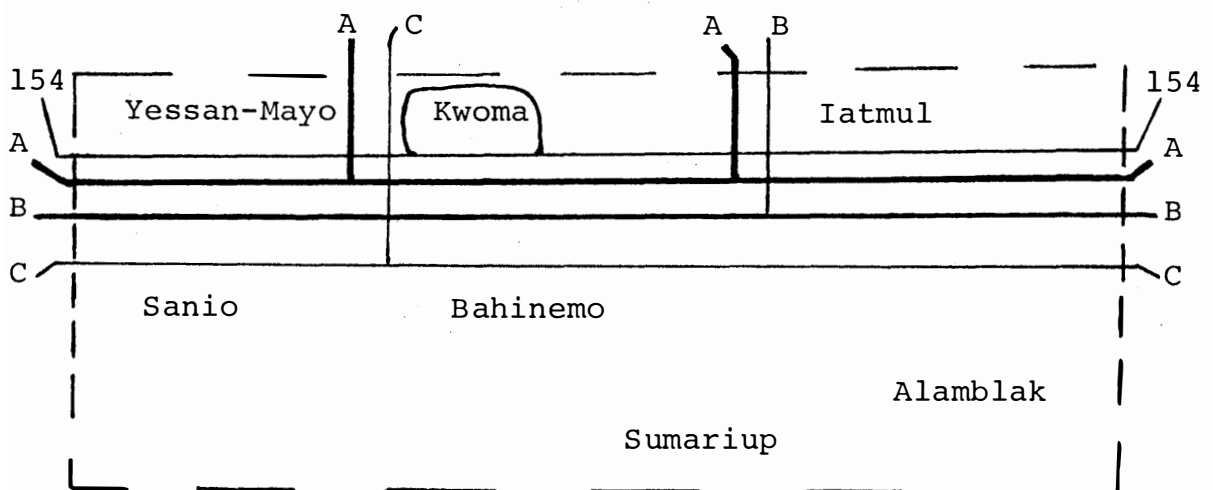
A number of isoglosses encompass all of the languages concerned; some of these are listed below. These isoglosses suggest the plausibility that proto-languages of the families involved developed from a common source.

- (132) məyə (Sum.), mə (San-Hio.), mi (Bah., Iat.), miy (Ala., Kwo.), mī (Y-M) 'tree'.

- (160) k^hkir (Ala.), g^hir-nab (Sum.), g^hig^hi (Bah.), ?i?əre (San-Hio.), g^hir (Y-M), g^hiri (Kwo), gə (Iat.) 'maggot'.
- (180) ini (San., Bah.), Kun (Sum.), kiñ (Ala.), kiñi (Kwo), kin (Y-M), g^hini (Iat.) 'tail'.
- (291) nayay (Ala.), ay (San-Hio.), a (Sum.), iya (Bah.), ya (Y-M, Kwo., Iat.) 'come'.
- (293) niy ~ i (Sum.), i (Bah, San-Hio., Kwo.), yi (Ala.), yi (Y-M, Iat.) 'go'.

Figure 16 indicates that there is no subgrouping among the non-Sepik-Hill Families. Most of the lexical isoglosses which define a Sepik Hill Stock are included in Fig. 12, and as the Figure shows, most of the isoglosses which define the SH group also distinguish the other Middle Sepik Families from each other.

Figure 12: Isoglosses Defining Middle Sepik Subgroups



DEFINITIONS OF ISOGLOSSES FOR FIG. 12

Isogloss Bundle A

- (164) nəm (Sum., Ala.), nəmu (Bah.), nəme (San.) | bəkwa (Iat.)¹ | nika (Kwo.) | ni (Y-M) 'louse'.
- (175) ba^hi (Sum.), ba^hiy (Ala.), ba^h (Bah.), pa^hi (San.) | wa^hmɪn (Y-M) | eyi (Kwo.) | sivuk (Iat.) 'hornbill'.

¹One Ndu language has a cognate form i.e., ñ^hmu (Abelam).

- (190) bɪbɪ (Ala.), bɪboha (Sum.), bobu (Bah.), pəpəri (San.) |
s[ɛ]l (Y-M) | nosap (Kwo) | kəpma (Iat.) 'earth'.

Isogloss Bundle B

- (134) gi (Sum., Ala., Bah.), ?i (San.) | gawɪə (Iat.) | ow (Y-M,
Kwo.) 'grub'.
- (316) tina (Sum.), šiña (Ala.), sina (Bah.), sini (San-Hio.) |
titi (Y-M), siti (Kwo.) | vat (Iat.) 'rise'.

Isogloss Bundle C

- (38) fir(ɨ) (Sum., Ala.), fu (Bah.), fəluwə (San.) | mandə (Iat.),
mandɨ (Kwo.) | yɔmɔ (Y-M) 'testicle'.
- (182) tɪhɪy (Sum.), tɪhi (Ala.), ti (Bah.), təhi (San.) | gusi
(Iat.), gusi (Kwo.) | wasə (Y-M) 'turtle'.

Individual Isogloss

- (154) yu (Sum.), yawy (Ala.), yow (Bah., San.), yaw (Hio.) | walə
(Y-M), warə (Iat.) | asa (Kwo.) 'dog'.

The lexicostatistics suggest the possibility of two configurations of subgroupings, namely, the Sepik Hill Stock may form a subgroup either with Yessan-Mayo or with Yessan-Mayo and Kwoma. The evidence from isoglosses of shared cognates does not significantly support any such subgrouping involving the Sepik Hill Stock, however. Yessan-Mayo, Kwoma, and Iatmul each share a few cognates uniquely with the Sepik Hill Stock which indicates that a multiple-branching tree relates them all together.

Specifically, six isoglosses associate Yessan-Mayo with the Sepik Hill languages as a whole.

- (42) wula (Sum.), wura (Ala.), wo (Bah., San-Hio.)¹, warə (Y-M)²
'leg, foot'.
- (135) tea-m (Sum., Ala.), sea (Bah.), siə (San.-Hio.), tea (Y-M)
'coconut palm'.

¹The wo form occurs in complex constructions. The free forms are luwa ~ ?owa (Bah.), rowə (San-Hio.).

²The warə form occurs in guli warə 'knee'. The Y-M free form is towə.

- (295) filene (Sum.), fune (Ala.), fəi (Bah., San.), fai (Y-M)
'swim'.
 (297) owi (Sum.), yuk (Ala.)?, wi (Bah.), u (San.), wi (Y-M)
'bathe'.
 (324) ahuna (Sum.), nayur (Ala.), nana (Bah.), aini (Hio.), nai
(Y-M) 'fight'.
 (82a) firiha (Sum.) 'boil, pus', firi (Ala.), fili (Bah.), fir
(Y-M) 'pus'.

Three isoglosses associate Kwoma with the Sepik Hill languages as a whole.

- (70) waf (Sum., Ala.), wafo (Bah.), wawə (Hio.), wəfu (Kwo.)
'liver'.
 (82b) fi (Su., Ala.) 'sap'; pi (Bah.) 'exuding liquid'; fi (San.)
'exuding liquid (i.e., pus, milk, semen)'; fi (Kwo.) 'milk'.
 (251) bi fayti (Sum.), biš (Ala.), bika (Kwo.) 'pointed'
bi (Bah.), pi (San.) 'pointed, tooth'.¹

Three isoglosses associate Iatmul with the Sepik Hill languages as a whole.

- (57) 'bišə (Sum., Ala.), pi (San-Hio.), bi (Bah.), nibi (Iat.)
'tooth'.
 (76) ili (Sum.), li (Bah.), ri (Ala., San.), di (Iat.) 'faeces'.
 (244) nifin (Ala.), əfin (Sum.), fənesi (Hio.), bin/t/k (Iat.)
'you (dual)'.
 (244) nifin (Ala.), əfin (Sum.), fənesi (Hio.), bin/t/k (Iat.)
'you (dual)'.

Eight isoglosses combine Yessan-Mayo, Kwoma, and our four representative Sepik Hill languages as follows:

- (50) nimbika (Sum.), ñimbik (Ala.), nibiki (Bah.), mapinə (San.),
mɔkʷɔ (Y-M)?, maka(bi) (Kwo.)? 'forehead'.
 (98) mam (Sum., Ala.) (term of address), (m)amu (Bah., San.),
mem (Y-M), aməi (Kwo.) 'mother's brother'.
 (119) kikimoha (Sum.), kir-pa (Ala.), kəre (San-Hio.), ki (Bah.),
kir-saf (Y-M) (fire, coal), kəyə (Kwo.) 'charcoal'.

¹Words for 'tooth' in these languages are as follows: bišə (Sum., Ala.), bi (Bah.), pi (San.), fu (Kwo.).

- (162) mogiɫi (Sum.), mugr (Ala.), yə-mugu (Bah.) (*lizard-crocodile*), har-məʔoru (San.) (*snake-crocodile*), mugwor (Y-M), [mɔ] (Kwo.) '*crocodile*'.
- (239) na(n) (Sum., Ala.), ani (Bah.), anə (Hio.), an (Y-M, Kwo.) '*I*'.
- (241) əɫ (Sum.), rër (Ala.), ləl (Bah.), rə (Hio.), rɪ (Y-M, Kwo.) '*he*'.
- (249) kɪɫi-ta (Sum.), kɪr-ta (Ala.), kərə (San.), kɪr-saf (Y-M), ke-hafa (Kwo.) '*black*'.
- (363) andɪ (Sum.), ɲda (Ala.), da (Bah.), etə (Hio.), ata (Y-M), dɪ (kwo.) '*this*'.

Since there are only about six isoglosses which encompass only Yessan-Mayo and Kwoma, the eight combining Yessan-Mayo, Kwoma, and the Sepik Hill languages may be evidence for a subgrouping. In contrast, only two isoglosses combine Yessan-Mayo, Iatmul, and the Sepik Hill languages, and none combine Kwoma and Iatmul with the Sepik Hill languages.

The isoglosses discussed thus far have confirmed the internal unity of the Sepik Hill Stock. Many other isoglosses differentiate between the Sepik Hill languages while combining individual Sepik Hill languages with Yessan-Mayo, Kwoma, and Iatmul. As the lexicostatistics indicate, the central and eastern Sepik Hill languages share more cognates with the non-Sepik-Hill languages than does Sanio-Hiowe. Isoglosses of these cognates do not, however, suggest that either Yessan-Mayo, Kwoma, or Iatmul bear a closer or equal relationship to the central and/or eastern SH languages than does Sanio-Hiowe. This conclusion does not contradict the lexicostatistics.

In general, approximately the same number of isoglosses combine each representative Sepik Hill language with the non-Sepik-Hill language being compared. The higher cognate count for the central and eastern languages derives from the fact that they are more often combined in isoglosses with non-Sepik-Hill languages than is Sanio-Hiowe (representing the western languages). While these facts do not mitigate against the internal unity of the Sepik Hill Stock, they probably do reflect the fact that the central and eastern Sepik Hill languages bear a closer relationship

to each other than they do to Sanio-Hiowe. That is why, for example, when Yessan-Mayo shares a cognate with Bahinemo, it is more likely to share the same one with Sumariup than with Sanio-Hiowe.

b. ISOGLOSSES OF GRAMMATICAL MORPHEMES

Isoglosses of grammatical morphemes verify that the languages involved in this study are genetically related. These isoglosses provide no significant evidence for subgrouping. Both Yessan-Mayo and Iatmul uniquely share different concordance systems with Sepik Hill languages. Isoglosses of tense markers result in overlapping distributions among all of the languages. These and other individual affixes are presented below.

Tense Markers

The tense markers of the languages under study are listed in Table 140. The data in the table suggests that the present-day tense systems of Middle Sepik languages derived from a common origin. The proto-Middle Sepik tense systems has apparently undergone considerable alteration in both forms and categories as seen in the modern day descendants of that language. Consequently, no single morpheme with the same meaning is cognate in all of the languages in the table. In addition to evidence of neutralization and/or additions of grammatical categories, there is evidence of the redistribution of morphemes from one category to another; some of this redistribution may have happened intra-lingually and some may be due to borrowing between languages. Semantic shifts among morphemes which have not changed categories has also occurred, e.g., the meanings of the three past tenses are different at least in Alamlak, Sumariup, and Bahinemo.

Table 140: Tense Markers

	Alamblak	Sumariup	Bahinemo	Sanio - Hiowe	Yessan-Mayo	Kwoma	Iatmul
Future	~ -rah ~ -rhw (with 1S forms)	-(d)ah	-ʔəɪ 'immed. future' -{ay} 'remote {əy} future'	-lwə ~ -ye	-{y}e -{w}e	-ti	-kita -vəy-kə
Present	-w(ë) 'Imper- fective'	∅	-w	-{y}a -{w}a	-{y}a -{w}a	-bwa	-wa ri-kə
I.PST	{f-} {∅} (today)	f(ə) - ~ af- (up to one week in the past)	-({y})a -({w})a (up to two days ago)	f-	-{y}e -{w}e -{y}a -{w}a -{y}əy -{w}əy -(i)m (before today)	-r	-un -wə
N.Pst	-rë (yesterday)	-lə (before one week)	-l (three days to about a week ago)	-rə			
R.PST	-më (before yesterday)	-mə 'remote past'	-m(u) 'remote past'	-mə			

Iatmul's tense forms are the most aberrant and thus the most difficult to derive from a proto-system which may be proposed as a source for the forms in the other languages. The present and future forms in Iatmul are easier to relate to the other languages when cognate forms in other Ndu languages are considered. The *-kə* morpheme evidently represents the non-past tense morpheme which is alternately */-kwə/* or */-gwə/* in Wosera Abalam and */-w/* in Maprik Abelem and in Boiken.¹ An older **-kwə* apparently became */-kə/* in Iatmul, and lost the initial 'k' in other languages (including other Ndu languages e.g., Maprik and Boiken).² The full present tense form in Iatmul, */-ri-kə/*, is probably relatable to the Boiken future tense form */-rikwə/*. The latter is strikingly similar to Alamblak */-rhw/* and even more so to the Irrealis form of the future tense */'rhwa/*, which occurs with all persons (cf. V.B.1.b).

The past tense forms of Iatmul are more difficult to explain. Iatmul is the only Ndu language that has more than one past tense. The remote past */-wə/* must be suspect of being a loan, based on */-mə/* the Sepik Hill languages, due to the lack of a regular *w-m* correspondence. The lack of such a correspondence could be due to an inadequate amount of data, however. The answer to this question will ultimately involve the answer to the origin of the past tense marker */- $\left\{ \begin{matrix} y \\ w \end{matrix} \right\} ə/$* in the Hiowe dialect of Sanio-Hiowe which we will not attempt to discuss here. From the evidence deriving from the non-past-tenses in Ndu languages, we affirm that Iatmul and all languages of the Ndu family derive at least that part of their tense systems from the same source as the Sepik Hill languages did.

¹The data used here for Ndu languages was taken from Laycock (1965). Laycock's */ə/* and */ʌ/* are rewritten here as */i/* and */ə/*, respectively, to facilitate comparison with equivalent forms in this study.

²The older (proto-Middle-Sepik?) **-kwə*^ə has apparently remained in tact with the three verbs of the irregular conjugation I in Alamblak (cf. V.B.1.e.). Synchronically this is an irregular conjugation which adds *uk* to the end of the stem of the three common verbs 'hear', 'say', and 'give' in the present tense.

The past tense forms of Yessan-Mayo and Kwoma are more obviously cognate with Sepik Hill forms than are those of Iatmul. From the similarities of these and the present tense forms, one might suggest a subgrouping of Sepik Hill, Yessan-Mayo and Kwoma. The future tense forms, however, relate Sepik Hill languages to Iatmul more easily than to Yessan-Mayo and Kwoma.¹

Verbal Subject/Object Markers

Alamblak, Sumariup, and Ndu languages share the feature of coreferencing the subject by pronominal verbal suffixes. Although there are cognates among the free pronoun forms, none of the pronominal subject affixes appear to be cognate. At least one Ndu language, Manambu, also coreferences objects, like Alamblak and Sumariup and, to a limited extent, Sanio-Hiowe.

Nominal Number and Gender Markers

The nominal number-gender system, which is fully developed in most central and eastern Sepik Hill languages, is retained only residually in Bahinemo, Sanio-Hiowe, and Yessan-Mayo. Bahinemo and Sanio-Hiowe retain the plural marker $-m$, which occurs optionally on nouns in Sanio-Hiowe and Bahinemo and obligatorily on the demonstrative in Bahinemo. Yessan-Mayo retains $-(a)r$ '3SF' and $-(a)t$ '3SF' on certain kinship nouns and demonstratives. From the data available, the other Sepik Hill languages generally manifest the Sumariup and Alamblak forms, viz., $-l/-r$ '3SM', $-s/-t$ '3SF', $-f$ '3D', and $-m$ '3PL'.

A more complete set of person-number-gender markers is identifiable on free-form pronouns in Sepik Hill languages, Yessan-Mayo, and Iatmul, as the following isoglosses demonstrate:

- (412) $-\text{əm}$ (Sum.), $-m$ (Ala., Bah., Hio., Y-M), $-n$ (Iat.) 'PL (in 1-person forms)'.

¹There are two remotely possible connections between the future tense morphemes of Yessan-Mayo and Kwoma and certain morphemes in Alamblak. The Yessan-Mayo form $-ti$ is similar to the future tense form of the irrealis marker, $-t$, in Alamblak. Kwoma $-kita$ may be related to Alamblak $k\text{ët}\text{ë}$ 'later'.

- (414) and (418) -əm (Sum.), -m (Ala., Bah., Y-M) 'PL (in 2- and 3-person forms)'.
 (417) -f (Sum., Ala., Y-M), -fu (Bah.) 'dual (in 3-person forms)'.
 (415) -r (Ala., Y-M (in emphatic forms)), -l (Bah.) '3SM'.
 (416) -t (Ala., Y-M (in emphatic forms)) '3SF'.

Miscellaneous Morphemes

A few other isoglosses will be mentioned here to underline the genetic relationship between the languages under study.

Alamblak, Sumariup, and possibly Iatmul share cognates of the imperative prefix as follows:

- (432) (w)a- (Sum., Ala.), (m)a- (Iat.) 'imperative'.

Most Sepik Hill languages, Yessan-Mayo, and Iatmul share cognates of one of the two possessive markers as follows:

- (372) -rho ~ -roh (Ala.), -dihō (Sum.), -(r)o (san-Hio., Bah.),
 -rə (Y-M, Iat.) 'possessive'.

Alamblak, Yessan-Mayo, and Iatmul appear to share a clause-linking clitic as follows:

- (439) -(i)n (Y-M), -n (Iat.), -n(e) (Ala.) 'and'.

Yessan-Mayo and Alamblak share common contingency/irrealis and vocative markers as follows:

- (440) -k(e) (Y-M), -kah (Ala.) 'contingency/irrealis/negative marker'.
 (441) -əy (Y-M), -ai (Ala.) 'vocative'.

In summary, the evidence from isoglosses of grammatical morphemes strongly supports the classification of Sepik Hill, Tama, Nukuma, and Ndu languages which derives them from a common source. This section neither provides positive evidence of the internal unity of the Sepik Hill Stock, nor does it support the

inclusion of any other languages within the Sepik Hill Stock. The evidence is inconclusive about subgrouping among the Middle Sepik language groups of Family or Stock level. From existing evidence, a tree representation of the Middle Sepik Super Stock must remain a multiple-branching tree. Isoglosses of grammatical morphemes do show a slightly closer affinity between the Sepik Hill languages and Yessan-Mayo than between the Sepik Hill group and either Kwoma or the Ndu Family.

4. SYNTHESIS

In this section we will attempt to synthesize the evidence concerning the relationships between Sepik Hill languages and other languages of the Middle Sepik area, viz., Yessan-Mayo, Kwoma, and Iatmul. In general, the evidence indicates that the languages of the Sepik Hill Stock (so associated in section D) form a subgroup within a Middle Sepik Super Stock which is composed of at least the Sepik Hill Stock and the Tama, Nukuma, and Ndu language Families.

Lexicostatistics

Percentages of shared cognates in Table 139 suggest a close relationship between Yessan-Mayo and Kwoma. This suggestion confirms the calculations of Conrad and Dye (1975:31). Together these two languages share more cognates with Sepik Hill languages than does Iatmul. The weakness of this evidence is that the differences between the percentages which would separate off Iatmul are not very significant, especially since the Sanio-Yessan-Mayo and Sanio-Kwoma percentages are as low as they are.

Sound Correspondences

Two correspondence sets (*k-k-k-g and *m-m-m-n) combine Sepik Hill, Yessan-Mayo, and Kwoma, versus Iatmul. One set (*ts-s, č-t-t) combines Sepik Hill and Kwoma versus Yessan-Mayo and Iatmul. The second grouping is not supported by any other evidence.

Isoglosses of Lexical Morphemes

Isoglosses of lexical morphemes provide some support for a hypothesis grouping SH, Y-M, and Kwo. versus Iatmul. Eight

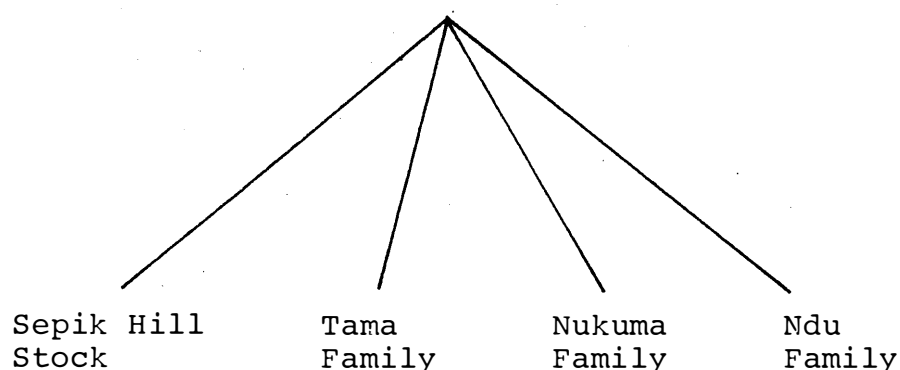
isoglosses define a Sepik Hill/Yessan-Mayo/Kwoma subgroup in contrast to other groupings which are defined by five, three, two, or one isogloss.

The serious difficulty with using that evidence as a basis for subgrouping is that it is impossible to discern between common retentions and common innovations for these isoglosses at this stage of research.

Isoglosses of Grammatical Morphemes

It has been already mentioned that isoglosses of grammatical morphemes do not provide any positive evidence of subgrouping among the language families under study. Given the tenuous nature of the evidence of subgrouping and the lack of supportive evidence among the distributions of grammatical morphemes, the relationship of the Sepik Hill languages to other Middle Sepik languages is best defined as a multiple-branching tree consisting of four branches as follows:

Figure 13: Middle Sepik Super Stock



F. CONCLUSION

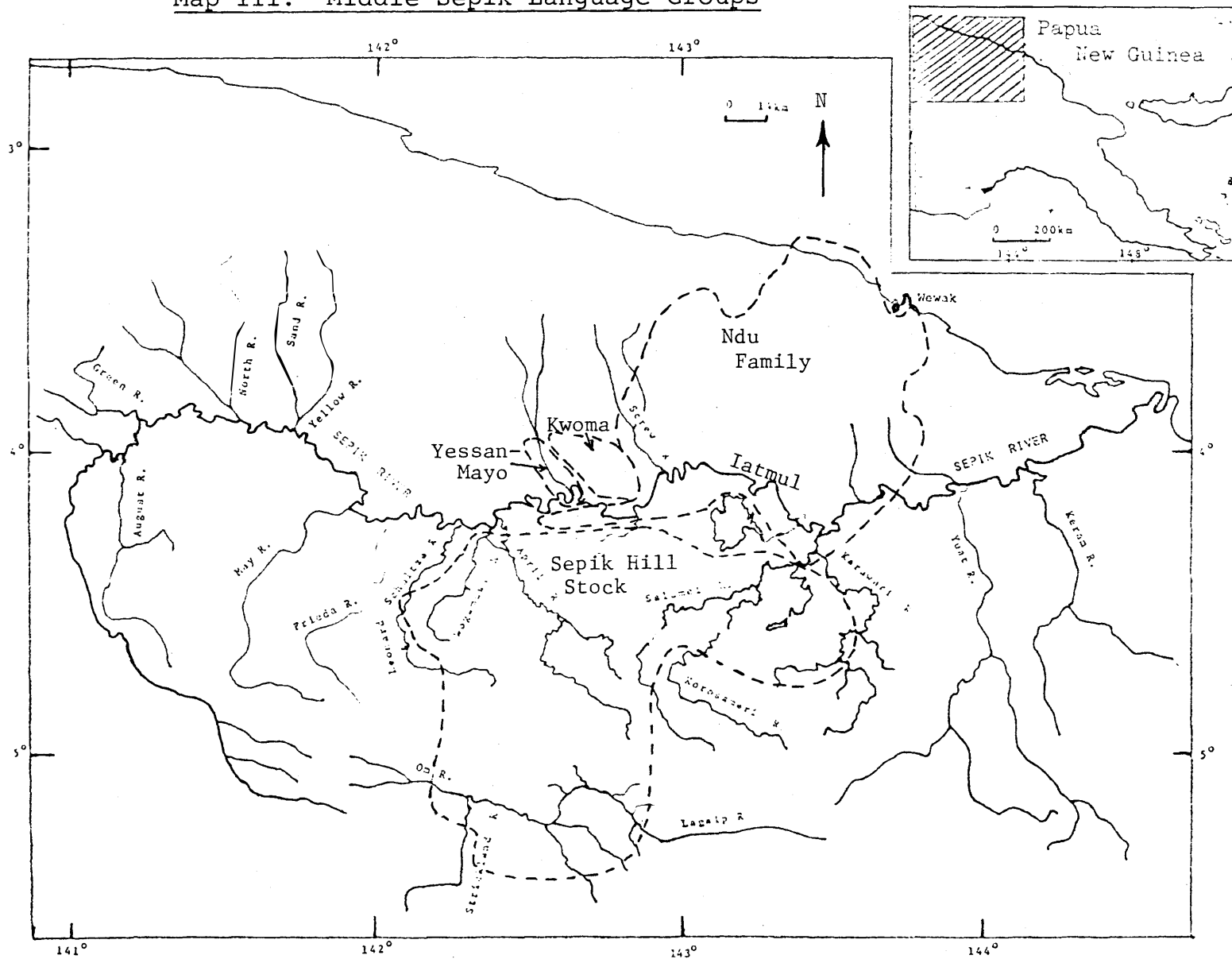
In this chapter Alamblak has been related to other Middle Sepik languages. Its closest relationship is with Kaningara. Together Alamblak and Kaningara form the Eastern Sepik Hill Family which is in a rather detached position within the Sepik Hill Stock.

The eastern family languages have a close affinity with their nearest neighbours among the central Sepik Hill languages. For example, Alamblak and Sumariup exhibit several conservative features compared to Bahinemo and Sanio-Hiowe. Alamblak and

Sumariup, for instance, have retained the fullest complement of nominal and verbal person-number-gender markers.

The Sepik Hill languages as a whole have been related to other Middle Sepik languages, viz., Yessan-Mayo, Kwoma, and Iatmul. All of the language groups represented by these languages are distantly but recognizably related.

Map III: Middle Sepik Language Groups



Appendix A
VERB PARADIGMS

The two paradigms listed below present verb forms (in phonetic transcription) which are unmarked for mode and aspect in four tenses--Remote Past, Near Past, Immediate Past, and Future--and marked for Imperfective aspect in the Present tense. The phonological rules which have been postulated to derive these surface forms from their underlying forms are discussed in Chapter II, primarily in section B.2.

The forms for nayay 'come' (Conjugation II) are as follows:

	R.PST	N.PST	I.PST	PR	FUT
1S	n ^e l am ^e a	n ^e l aʔ ^e a	l nia	l niwa	l neʔgwa
D	n ^e l am ^e n ^e	n ^e a l ʔ ^e n ^e	n ^e l a ⁿ ^e	n ⁱ l ewn ^e	ne l ʔagin ^e
PL	n ^e l am ^e n ^e m	n ^e a l ʔ ^e n ^e m	n ^e l a ⁿ ^e m	n ⁱ l ewn ^e m	ne l ʔagin ^e m
2S	n ^e l am ^o	n ^e l aʔ ^e	n ⁱ l e	n ⁱ l ewn	ne l ʔagin
D	n ^e a l m ^e b in	n ^e a l ʔ ^e b in	n ⁱ l e b in	n ⁱ l e ^o b in	ne l ʔagib in
PL	n ^e a l m ^e k ^e	n ^e a l ʔ ^e k ^e	n ⁱ l e k ^e	n ⁱ l e ^o k ^e	ne l ʔaxk ^e
3SM	n ^e l am ^e ʔ ^r	n ^e l aʔ ^e ʔ ^r	n ^e l aʔ ^r	n ⁱ l ew ^r	ne l ʔagi ^r
SF	n ^e l am ^e t	n ^e l aʔ ^e t	n ^e l a ^t	n ⁱ l ewt	ne l ʔagit
D	n ^e l am ^e ʔ	n ^e l aʔ ^e ʔ	n ⁱ l e ʔ	n ⁱ l e ^o ʔ	ne l ʔagi ʔ
PL	n ^e l am ^e m	n ^e l aʔ ^e m	n ⁱ l e m	n ⁱ l e ^o m	ne l ʔagi t m

The forms for hay 'give' (Irregular Conjugation I) are as follows:

	R.PST	N.PST	I.PST
<u>A</u> <u>U</u>			
1S - 2S	xem ^e l an t n	xaʔy ^e l an in	pa gu l yan in
D - D	xem t l n ^e n t b in	xaʔy ^e l n ^e n i b in	pa gu l n ^e n i b in
PL - PL	xem t l n ^e m k ^e	xaʔy ^e l n ^e m k ^e	pa gu l n ^e m k ^e
2S - 3SM	xe l m ^e n t ʔ ^r	xa l ʔy ^e n i ʔ ^r	pa l gu n i ʔ ^r
D - D	xe l m ^e b in t ʔ	xa l ʔy ^e b in i ʔ	pa l gu b in i ʔ
PL - PL	xem ^e l k ^e m i m	xaʔy ^e l k ^e m i m	pa gu l k ^e m i m
3SM - 1S	xe l m ^e ʔ a	xa l ʔy ^e ʔ a	pa l gu ʔ a
SF - S	xe l m ^e ʔ ta	xa l ʔy ^e ʔ ta	pa l gu ta
D - D	xe l m ^e b t n ^e	xa l ʔy ^e b in ^e	pa l gu b in ^e
PL - PL	xe l m ^e m i n ^e m	xa l ʔy ^e m i n ^e m	pa l gu m i n ^e m

	PR	FUT
<u>A</u> - <u>U</u>		
1S - 2S	kaguk ^l wanin	xi ^l řgwanin
D - D	kagukwi ^l nëniβin	^l xi ^l řagi ^l nëniβin
PL - PL	kagukwi ^l nëmkë	^l xi ^l řagi ^l nëmkë
2S - 3SM	kaguk ^l wëniř	xi ^l řaginiř
D - D	kaguk ^l wobinip	xi ^l řagibininë
PL - PL	ka ^l gukwo ^l këmim	xi ^l řaxkiminëm
3SM - 1S	kaguk ^l wořa	xi ^l řagiřa
SF - S	kaguk ^l wota	xi ^l řagita
D - D	kaguk ^l wobinë	xi ^l řagibinë
PL - PL	kaguk ^l wominëm	xi ^l řagimınëm

Appendix B
COUNTING AND TALLY SYSTEMS

A. INTRODUCTION

Cardinal numerals one to five, ten, and twenty modulo twenty are described in section IV.C.2.c. Other numerals used primarily for counting are described below along with two distinct counting systems, i.e., a money-counting system and a traditional tally system.

B. HIGHER NUMERALS

Numerals for six and above can be formed by the Co-ordinate Numeral Phrase which is described in Table 141.

Table 141: Co-ordinate Numeral Phrase

Functions	+ Head ₁	+ Conj ₁	+ Head ₂	± (+ Conj ₂ + Head ₃) ⁿ	
exponents	Multiplier Phrase	-i	Multiplier Phrase	-e	Multiplier Phrase

Notes: Only a minimal form of the Multiplier Phrase may manifest the Head₁ function.

Theoretically any numeral can be formed by repeating Conjunction₂ + Head₃ indefinitely, or the Co-ordinate Numeral Phrase may manifest a Quantifier function in an NP by not including the Terminator on the final Multiplier Phrase. In practice, however, the Co-ordinate Numeral Phrase is used primarily for counting (rather than as a quantifier of a noun) and it is only infrequently used for numerals above 'nine'.

Multiplier Phrase

The Co-ordinate Numeral Phrase is manifested by conjoined phrases called Multiplier Phrases. The Multiplier Phrase is portrayed in Table 142.

Table 142: Multiplier Phrase

Functions	<u>+</u> Relator	<u>+</u> Modifier	+ Nucleus	+ Term- inator	<u>+</u> Emphatic
exponents	manakor 'at the other side'	Possessive Phrase (v. Tab 45 p. 180)	Multiplier Base (v. Tab 40 p. 163)	PNG markers (v. Tab 36)	-n
	wom 'another'		Numerals (1-4)		

Before giving examples of numerals, we shall discuss the exponents of the Multiplier Phrase.

Relator Function of the Multiplier Phrase

The Relator Function serves to relate the exponent of the Nucleus to the nucleus of the previous Multiplier Phrase in a Co-ordinate Numeral Phrase. The exponents of this function are listed in Table 142.

Modifier Function

The Modifier specifies the body part location of the numeral which occurs in the Nucleus. This function is manifested by a Possessive Phrase which is restricted to exhibiting one of three nouns, viz., *tir* 'hand', *wura* 'foot', and *yima* 'person'. There are strict constraints on which of these exponents of the nucleus of the Possessive Phrase may co-occur with which exponents of the Nucleus of a preceding Multiplier Phrase. Some examples of numerals are given in example 1 which will illustrate some of these constraints.

Nucleus of the Multiplier Phrase

The Nucleus function of the Multiplier Phrase is manifested by a Multiplier Base or the numerals 'one' to 'four'. The numerals are manifested only when preceded by a modifier, i.e., a Possessive Phrase.

When the Multiplier Base manifests a non-initial Head of a Co-ordinate Numeral Phrase, it may exhibit the constituents as

described in Table 40 (p. 163) plus a further exponent of the Head; viz., *wura* 'foot'. A Multiplier Phrase exhibiting *wura* in the Head function is illustrated in example 1(c).

- 1(a).

<u>Multiplier Phrase</u>	<u>Conj</u>	<u>Multiplier Phrase</u>
Nuc: Mult.Base Term		Relator Modifier Nucleus Term.
Head Delim		
tir yoht - t - i	-	manakor tirtho rpa - t
hand whole - 3SF	-	other hand's one -3SF
<i>'six'</i>		<i>,side</i>
- (b).

tir hos - f - i	-	wuratho rpa - t
hand two - 3D	-	foot's one -3SF
<i>'eleven'</i>		
- (c).

tir hos - f - i	-	wura yoht - t
hand two - 3D	-	foot whole -3SF
<i>'fifteen'</i>		
- (d).

yima hosfirpa - t - i	-	wom yimarho tir hos - f
person three - 3SF	-	another person's hand two -3D
<i>'seventy'</i>		
- (e).

<u>Multiplier Phrase</u>	<u>Conj</u>
tir hos - f	-
hand two -3D	-
<i>'seventy'</i>	

<u>Multiplier Phrase</u>	<u>Conj</u>
Mult. Base	
wura yoht - t	-
foot whole-3SF	-
<i>'seventy'</i>	

<u>Multiplier Phrase</u>				
Relator	Modifier	Nucl.	Term	Emph.
wom	wuratho	rpa	- t	- n
another	foot's	one	- 3SF	- EMP
<i>'sixteen!'</i>				

C. MONEY-COUNTING CONSTRUCTIONS

Monetary units are counted in two ways. The ten-cent unit is formed in one way and the single-cent, \$1, and \$10 units in another. Single-cent, one-dollar, and ten-dollar units are formed by a modifier phrase type consisting of a cardinal number quantifying one of three possible heads.

Table 143: Monetary Phrase Base

Functions	+ Quantifier	+ Head
exponents	numeral	tahiy 'stone (= cent)'
	Co-ord. Num. Phrase	toa 'leaf (= dollar) ¹
		mĩNgiñ 'stick (= ten-dollar unit)'

note: The Co-ordinate Numeral Phrase co-occurs only with mĩNgiñ 'stick'. A truncated form (lacking the Terminator of the last Multiplier Phrase) co-occurs with tahiy and toa.

The ten-cent unit is formed by placing the Monetary clitic -fa immediately following a Numeral root, or Multiplier Base, in a Multiplier Phrase. Any amount of money may be designated by conjoining appropriate units by normal conjoined phrase patterns. A few examples will illustrate the process.

2(a). tir yoht - fa - t 'fifty cents'
hand whole - ten- 3SF

¹At the time of this research there was still considerable ambiguity in the toa 'leaf' unit as to whether it was a one-Kina (K1 ≈ \$1) or two-Kina (K2 ≈ \$2) unit. This ambiguity, primarily among the older speakers, derives from the days of the British pound system where 'one leaf' was the monetary unit designating 20 units (shillings) or one pound. Alamlak people have exhibited great facility in adapting to four monetary systems in their lifetime (German, Australia C.s.d., Australian decimal, and the present Papua New Guinean).

2(b). rpa - fa - t - i rpa - tahŋy - t 'eleven cents'
 one -ten-3SF-and one - stone -3SF

(c). yima hos - f mŋNgiñ - m - i tir yoht - t
 person two -3D stick - 3PL-and hand whole-3SF
 mŋNgiñ - m - e rpa toa - t - e rpa - fa - t
 stick -3PL-and one leaf-3SF-and one - ten-3SF
 '\$451.20'

4) TALLY SYSTEMS

There is a men's and a women's tally system in Alamblak, both reported to be borrowed from the Maramuni¹ people. Both are based on body part tallying. The women's tally system (the one traditionally used by women) is unusual in that women's tally systems have not been reported elsewhere in Papua New Guinea (cf. Laycock 1975), and secondly for its inclusion of two low points (the breasts) to the exclusion of points on the face.

For both systems, each point in the system corresponds to a body part which is named by the same term as that used in counting. Both systems are initiated with the little finger the left hand, and they are symmetrical in that the last point is the little finger on the right hand.

The tally systems are no longer regularly used except by the oldest members of the society. They are still readily recalled by the thirty-five year old and above age group, although there is some variation between speakers on the number of points included in the men's tally system. The men's system which was common to most of the men questioned is illustrated below. Points on the system equivalent to one through fifteen are listed. Numbers 16 through 29, which are the same body part term as numbers 14 through 1, are qualified with a relator: mkukor or manakor 'other side',

¹Maramuni is an Enga dialect of the West-Central family of the East Central Trans-New Guinea phylum (Wurm 1975c). It is one of the Enga dialects which overlaps from the Enga district into the East Sepik district in the area of the headwaters of the Maramuni River to the south of the Alamblak area.

Men's Tally System

1.	kambrë piñaf-r	'little finger'
2.	boha piñaf-r	'ring finger'
3.	rikuyakwënt-r	'middle finger'
4.	nëNgritkom-r	'index finger'
5.	mima piñaf-r	'thumb'
6.	wafi-t	'palm'
7.	gramtip-t	'forearm'
8.	tirNgënha-t	'elbow (outer)'
9.	bohdebi-t	'biceps'
10.	bringa-t	'shoulder'
11.	reNgomt	'neck muscle'
12.	mëhNgënha-t	'side of neck'
13.	yimbhindaNg-t	'ear'
14.	ñiNga-r	'eye'
15.	kusm-t	'nose'

If it is true that the men's tally system was borrowed from Maramuni as claimed by Alamblak speakers, then it has been clearly modified in the process. The Maramuni system initiated counting on the right hand instead of the left as it is in Alamblak.¹ At least three additional points occur in Alamblak giving a total of 29 vis-à-vis., the 23 of Maramuni. One point is not equivalent between the two systems: reNgomt 'neck muscle' in Alamblak corresponds to kunju (?) (or menöt) 'clavicle' in Maramuni. Finally, none of the Maramuni body part terms have been borrowed into the Alamblak system.

¹Refer to Kirschbaum (1938) for a discussion of the Maramuni system,

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AA	<i>American Anthropologist</i>
BLS	<i>Berkeley Linguistics Society</i>
CLS	<i>Chicago Linguistic Society</i>
IJAL	<i>International Journal of American Linguistics</i>
IULC	<i>Indiana University Linguistics Club</i>
LI	<i>Linguistic Inquiry</i>
LLWP	<i>Languages and Linguistics Working Papers</i>
OL	<i>Oceanic Linguistics</i>
PL	<i>Pacific Linguistics</i>
SAL	<i>Studies in African Linguistics</i>
SaS	<i>Slovo a slovesnost</i>
SILP	<i>Summer Institute of Linguistics Publications in Linguistics and Related Fields</i>
TLP	<i>Travaux Linguistiques de Prague</i>

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