PACIFIC LINGUISTICS
Series C - No. 81

THE ALAMBLAK LANGUAGE OF PAPUA NEW GUINEA (EAST SEPIK)

by
Les Bruce

Department of Linguistics
Research School of Pacific Studies
THE AUSTRALIAN NATIONAL UNIVERSITY

Bruce, L. *The Alamblak language of Papua New Guinea (East Sepik)*.
C-81, vi + 367 pages. Pacific Linguistics, The Australian National University, 1984. DOI:*10.15144/PL-C81.cover*
©1984 Pacific Linguistics and/or the author(s). Online edition licensed 2015 **CC BY-SA 4.0**, with permission of PL. A **sealang.net/CRCL** initiative.

PACIFIC LINGUISTICS is issued through the Linguistic Circle of Canberra and consists of four series:

SERIES A - Occasional Papers
SERIES B - Monographs
SERIES C - Books
SERIES D - Special Publications

EDITOR: S.A. Wurm

ASSOCIATE EDITORS: D.C. Laycock, C.L. Voorhoeve, D.T. Tryon, T.E. Dutton

EDITORIAL ADVISERS:

B.W. Bender
University of Hawaii
David Bradley
La Trobe University
A. Capell
University of Sydney
Michael G. Clyne
Monash University
S.H. Elbert
University of Hawaii
K.J. Franklin
Summer Institute of Linguistics
W.W. Glover
Summer Institute of Linguistics
G.W. Grace
University of Hawaii
M.A.K. Halliday
University of Sydney
E. Haugen
Harvard University
A. Healey
Summer Institute of Linguistics
L.A. Hercus
Australian National University
Nguyễn Đăng Liêm
University of Hawaii
John Lynch
University of Papua New Guinea
K.A. McElhanon
University of Texas
H.P. McKaughan
University of Hawaii
P. Mühlhäusler
Linacre College, Oxford
G.N. O'Grady
University of Victoria, B.C.
A.K. Pawley
University of Auckland
K.L. Pike University of Michigan;
Summer Institute of Linguistics
E.C. Polomé
University of Texas
Gillian Sankoff
University of Pennsylvania
W.A.L. Stokhof National Center for
Language Development, Jakarta;
University of Leiden
E.M. Uhlenbeck
University of Leiden
J.W.M. Verhaar
Gonzaga University, Spokane

All correspondence concerning PACIFIC LINGUISTICS, including orders and subscriptions, should be addressed to:

The Secretary
PACIFIC LINGUISTICS
Department of Linguistics
Research School of Pacific Studies
The Australian National University
Canberra, A.C.T. 2601
Australia.

Copyright © The Author

First Published 1984

Typeset by Christine Billerwell
Printed by A.N.U. Printing Service
Covers by Patria Printers
Bound by Adriatic Bookbinders Pty. Ltd.

Maps drawn by Manlio Pancino, Cartography, Department of Human Geography, Research School of Pacific Studies, A.N.U.

The editors are indebted to the Australian National University for assistance in the production of this series.

This publication was made possible by an initial grant from the Hunter Douglas Fund.

National Library of Australia Card Number and ISBN 0 85883 303 4

TABLE OF CONTENTS

	Page
PREFACE	v
PART ONE - INTRODUCTION	1
1.1 General orientation	1
1.2 Goals	2
1.3 Theoretical framework	3
1.4 Important theoretical notions employed in the grammar	4
1.5 Presentation	12
PART TWO - PHONOLOGY	18
2.0 Introduction	18
2.1 Segmental phonology	21
2.2 Phonotactics	54
2.3 The high central vocoid [ɨ]	61
2.4 Intonation	70
PART THREE - GRAMMAR	73
3.1 Non-verbal word classes	73
3.2 Nominal constructions	89
3.3 Independent verbal constructions	130
3.4 Syntax of independent clauses	178
3.5 Semantics of independent clauses	210
3.6 Sentences: coordination and subordination	252
3.7 More on dependent clauses	285
NOTES	296
APPENDIX A: VERB PARADIGMS	316
APPENDIX B: COUNTING AND TALLY SYSTEMS	318
1. Introduction	318
2. Higher numerals	318
3. Money-counting constructions	320
4. Tally systems	321
Notes	322

	Page
APPENDIX C: THE SPIRIT WHO TURNED INTO AN ANIMAL	323
INDEX	334
BIBLIOGRAPHY	349
MAP 1: SEPIK HILL LANGUAGES	16
MAP 2: ALAMBLAK DIALECTS AND SOCIAL GROUPS	17

PREFACE

This study is based upon a Ph.D. dissertation written by the author at the Australian National University. This revision represents a continuing investigation which is still 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 the original work as well as this stage of research.

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.

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. Of those who supervised the work on my dissertation, I am especially indebted to Dr. D.C. Laycock and Dr. C.L. Voorhoeve who were my principal advisors. Much appreciation is also due to Dr. T.E. Dutton for his comments on sections 1, 3.4, 3.5, 3.6 and 3.7, and to Dr. D.T. Tryon for his assistance on section 3.3.

I am also indebted to many others who have read various portions of drafts of the text, especially Dr. W.A. Foley and Dr. A.D. Andrews of the Department of Linguistics within the School of General Studies, A.N.U. Comments on Part Two from Dr. G.L. Huttar and Ms. Ann Cochrane both of the Summer Institute of Linguistics have been most appreciated. I have appreciated the helpful discussions concerning many aspects of the grammar with fellow Research Scholars in Linguistics, A.T. Walker and R.C. Caughley.

I am grateful to those who first introduced me to the fascinating discipline of linguistics, especially Dr. C.E. Peck, Dr. J.E. Grimes, Dr. R.E. Longacre, of the Summer Institute of Linguistics, as well as 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 improvements incorporated in this revision owe much to the encouragement, helpful criticisms and suggestions of the members of my dissertation examining committee, Professor M.A.K. Halliday, Professor John Lynch

and Dr. Bernard Comrie. Discussions with numerous colleagues of the Summer Institute of Linguistics including Dr. Ray Johnston, Evelyn Pike and Dorothy James have only resulted in helpful contributions.

The excellent and efficient job of voluntary typing and clerical assistance shared by Jean Bourke, Sineina Gela, Arlene Sanford, June Austing, Kotu Edward, Anastasia Kitoyai and Kathy Bruce is greatly appreciated. Ultimately the project would have been impossible to complete without the financial assistance provided by the Australian National University and the many friends and churches who so thoughtfully support the work of the Summer Institute of Linguistics.

Finally, the constant encouragement of my wife, Kathy, and 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 three boys, Bobby, Billy and Bradley, I am most grateful.

Bruce, L. *The Alamblak language of Papua New Guinea (East Sepik)*.
C-81, vi + 367 pages. Pacific Linguistics, The Australian National University, 1984. DOI:*10.15144/PL-C81.cover*
©1984 Pacific Linguistics and/or the author(s). Online edition licensed 2015 **CC BY-SA 4.0**, with permission of PL. **A sealang.net/CRCL** initiative.

Part One

INTRODUCTION

1.1 General orientation

The Alamblak language is spoken by approximately 1,200 people living in the East Sepik Province of Papua New Guinea. It is the easternmost of the Sepik Hill languages.[1]

1.1.1 Dialects and social groups

There are two major Alamblak dialects: the 'Karawari' and the 'Kuvenmas' 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 2). There are approximately 800 Karawari and 400 Kuvenmas speakers.

The Alamblak 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). Alamblak 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. Alamblak speakers identify varieties of Alamblak speech in terms of the six social groups. In fact, the words used to discuss these folk dialects of Alamblak are derived from the names of the social groups.

The speakers of the Karawari dialect constitute four of the six social groups, Këmbrofm, Marhëmbom, Yimanifm, and Bnarm. The Këmbrofm ([këmbɨ'ɽobɱ]) people live in the villages of Tanganbit (Meingenda), Amongabi, Morwok ([mëɽ'woɠɨʁ]), and in some traditional hamlet sites among the hills between the Karawari River[3] and the Black Water River to the west. The Marhëmbom ([maɽɨ'ɠëmbom]) 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 ([yɪma'nibɱ]) people live in the villages of Skayum (Sikaium) and Barabijim (Barapidjin) on the Wagupmeri River[4] and on Gitfat Creek; their traditional settlements were on the northern side of the Wagupmeri River. The Bnarm ([bɨ'naɽɨm]) people live in the villages of Yanitabak (Yenitabak) and Denyik (Danyig); their traditional settlements were north of the Wagupmeri River. The Bahwidëh (['baɠwidëɠ]) people and the

Bruce, L. *The Alamblak language of Papua New Guinea (East Sepik).*
C-81, vi + 367 pages. Pacific Linguistics, The Australian National University, 1984. DOI:*10.15144/PL-C81.1*
©1984 Pacific Linguistics and/or the author(s). Online edition licensed 2015 **CC BY-SA 4.0**, with permission of PL. A **sealang.net/CRCL** initiative.

'Wolpam' (Haberland 1974:4) people of the Kuvenmas dialect live in the villages of Tarakai, Sevenbuk, Anganamei, and Mariamei.

1.1.2 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 1963) 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 (cf. section 3.4), and subordinate clauses usually precede the independent clause (cf. section 3.6).

There are certain departures in Alamblak from some of the generalisations 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 1963:84) but it occurs as frequently before the main verb as after it (cf. section 3.7). Secondly, while subjects and objects (both nominal and pronominal) agree with the verb in person, number, and (in third-person singular forms) gender (cf. section 3.3), the adjective does not agree with the head noun for any category (cf. section 3.3) contrary to Greenberg's (1963:93) prediction.

In the noun phrase (cf. section 3.2) descriptive adjectives may precede or follow the head noun, with the prehead 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. section 3.3) is potentially a highly complicated polysynthetic unit manifesting various patterns of serialised 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 organisation of the clause. These notions are discussed both later on in this section and in sections 3.4 and 3.5.

1.2 Goals

The goals of the present study are twofold. The primary goal is to present a description of a grammar of Alamblak.[5] 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.

1.3 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 Alamblak, 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 an effort to meet the second goal of this study to make the grammar presented herein as useful as possible, 1) formal devices will be used sparingly, to enhance the presentation of significant generalisations in the grammar; 2) we will not be bound to one particular theoretical model; and 3) informal discussions will characterise 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 had some influence also. 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 sections 3.2-3.4, 3.6, and certain parts of section 3.1). 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 interrelationships 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 Alamblak facts with current investigations in universal grammar.

The grammar contains comments on certain theoretical questions where the structure of Alamblak 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.

1.4 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.

1.4.1 Various sources

1.4.1.1 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'. The notion of 'phoneme' as used here is equivalent to Hooper's (1975) archisegment having a partial phonetic specification. 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 Part Two.

1.4.1.2 Verb serialisation

In the discussion of verbal constructions (section 3.3), the main topic of theoretical interest is that of serialisation 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 Alamblak serialisation 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 conceptualised as a single state or event at some level of generalisation, even though they may be transparently analysable both syntactically and semantically. More importantly, an attempt is made to relate verb (root) serialisation and noun incorporation, as well as adjective and time word incorporation as cases of essentially the same type of serialised construction. This attempt received inspiration from Frantz's (1971:110-111) discussion as well as Sapir (1911), Lord (1973), and Longacre (1976:150ff). Sapir refers to the constraint that only commonly associated ideas can be serialised, and Longacre discusses the related notion of 'expectancy chain'. Some such notion seems to apply to all of the serial type constructions in Alamblak.

1.4.1.3 Subject, inner object, and outer object

The structure of the clause is examined in sections 3.4 and 3.5. Included in the discussion of the syntax of the clause (section 3.4) 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 coreferenced 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 3.5.3.3). The terms 'direct object' and 'indirect object', however, are dispensed with, and 'inner object' and 'outer object' are defined in terms of Alamblak syntax with reference to Faltz's (1978:76) discussion of indirect objects in universal syntax (cf. section 3.4.4).

The lower level morpho-syntactic structures as described in sections 3.1-3.3 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 section 3.4. 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 (Ø) manifestation of NP's which are obligatory for discourse-initial references to other than first- or second-person referents.

1.4.1.4 Semantic role structure

The semantics of the clause is discussed in section 3.5. 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 categorised as Modal roles and Orientation roles. These categorisations 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 categorisation 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' emphasises 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 Alamblak for the roles of the nuclear NP's. The case-grammar-type semantic case roles, then, will be discussed in section 3.5, but only as part of the feature specification of lexical items and not as part of an independent semantic structure of the clause itself.

1.4.1.5 Referential structure and the NP accessibility hierarchy

The noun phrase accessibility hierarchy (AH) is first mentioned in section 3.2 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 relativisation processes, as follows: Subject > Direct Object > Indirect Object > Oblique > Genitive > Object of Comparison.

Referential structure is discussed in section 3.5.2.3, 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.[6] Subjects in Alamblak are defined by several semantico-syntactic features: the subject is actor (identified by the first pronominal suffix in the verb), is the left-most of the nuclear NP's, may be relativised on, and controls interclausal switch reference. In example 1, yawyt *dog* is the subject.

1. Subj A

yawy-t fëh-r was -më -t -r
dog -3SF *pig*-3SM *pierce*-R.PST-3SF-3SM
A dog bit a pig.

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 coreferenced 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 kɨna-më -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 relativised 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 relativisation potential or relativising 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.

1.4.1.6 Animacy hierarchy

In conjunction with the discussion of referentiality, the notion of animacy hierarchy is introduced. As conceived by Van Valin and Foley (1980), the referentiality of a noun phrase is determined in part by discourse-controlled factors such as definiteness and giveness and in part by inherent features of topicality which can be described by an inherent topicality hierarchy (cf. Hawkinson and Hyman 1974) or an animacy hierarchy such as this: Speaker > Hearer Human proper > Human common > Animate > Inanimate (Foley 1976).

1.4.1.7 Communicative dynamism, backgrounding, and new and old information

Several theoretical notions are introduced in section 3.6 to help describe and analyse Alamblak 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 coordination or subordination. Coordinate 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. section 3.7).

1.4.2 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, generalised construction types or constituent units and the function-set correlation.[7] These features will be discussed briefly here.

1.4.2.1 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 semantic hierarchy.[8] Layered structures in the semantic hierarchy have been proposed but have not yet been extensively developed.[9]

Levels of structures in phonology have not been analysed for Alamblak. 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 organisation of Alamblak grammar which describes the typical pattern of smaller units functioning in larger structural units from morpheme classes (section 3.1), to stems to phrase-bases to phrases (sections 3.2 and 3.3), to clauses (sections 3.4 and 3.7), to

sentences (section 3.6). 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 Alamblak — are discussed at length in section 3.2.1. 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 Alamblak grammar. The Alamblak 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 Alamblak. Levels of stem, phrase-base, and phrase in Alamblak must be described as a mixture of features taken from each of the traditional levels of stem, word, and phrase.

The levels themselves do not exhibit discrete borders as shown most clearly in the discussion of numerals three and four (cf. section 3.2.3.2.3). 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 section 3.6. In the introduction to that section 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).[10] In general, syntactic units are discussed at the grammatical level where they function.

1.4.2.2 Construction type and tagmeme

Generalised 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 emphasised the importance of establishing the contrastive status of syntactic constructs with great care and deliberation. This particular focus of the theory has an 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 same requirements of identifiable contrastiveness, variability, and distribution to justify establishing specific grammatical units. The theory generalises 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. Morphosyntactic 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 permissable exponents manifesting described 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 cooccurrence 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 is given in Table 1 by way of illustration.

Table 1: Minimal kinship stem

Functions	+ Nucleus	+ Classifier
exponents	Kin term roots yimat *friend* tamëh *what* (substantive)	-em 'kinship marker'

A kinship stem consists of two obligatory constituents, one functioning as nucleus and the other as classifier. A particular stem may be constructed by selecting an exponent for each function. Possible exponents of the nucleus 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 36) it is listed as an exponent of the nucleus 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 nuclear functions of constructions at different levels are distinct from each other or if the difference between them lies in the functions of other constituents in the constructions which relate differently to and have different effects on the nuclear 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.

1.4.2.3 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 2.

Table 2: 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 generalised 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 section, 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 tëhwër
man house-S.SET *he.is.standing*
*A man is standing in/*on/*at a house.*

(c). S.SET NP

yimënë yuraknanë kmiñsëfm -n
we.went up.on mountains-S.SET
*We went up on/*in/*at the mountains.*

(d). S.SET NP

tëhmënë buktkor -n
we.stood headwaters-S.SET
*We stood at/*in/*on the headwaters.*

Role structure is still a part of clause structure. Only generalised roles, however, are indicated by the structure of the clause. For nuclear NP's we employ three generalised 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 Alamblak are discussed in Section 3.5.

A full specification of the features of a four-box tagmeme is frequently unenlightening or redundant. Hale (1974:57-58), referring to this fact, suggests that, "the degree to which any given tagmeme shows redundancy among its cell 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 Alamblak, 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 grammatical function of referential prominence (RP) must be used in conjunction with a different semantic function e.g. undergoer. The specification of an NP as both RP and actor (i.e. subject) is not redundant therefore, since an RP may also function semantically as undergoer. The four-box tagmeme is retained, then, largely for the sake of one or two NP types which are nuclear to the clause. Its usefulness as a descriptive device for all constructions in the grammatical hierarchy must be seriously questioned, however.[11]

There is a fourth feature at the intersection of Franklin's parameters of categories and semantics. This feature identifies semantic features of classes of exponents which expound a given function. This specification of construction points (i.e. tagmemes) is infrequently used in this work, being information which is also largely relegated to the lexicon. There are cases, however, where constructions specify certain semantic features of certain exponents. For example, nominal exponents of the related nucleus function of the allative NP (cf. Table 98) are specified as [- animate]. Thus kmi *village* may manifest the head of an Al NP but yima *person* may not, as in example 4.

4(a).

	Al NP	
nayayrahnëm	kmi	-ko
we.will.come	*village*-	AL
We will come to the village.		

(b).

	Al NP	
*nayayrahnëm	yima	-ko
we.will.come	*person*-	AL

The referent NP (cf. Table 94) makes no such semantic restriction on the exponents of the nucleus 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 in Table 1. 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.

1.5 Presentation

This study of the Alamblak language presents a phonological analysis in Part Two and a reference grammar in Part Three. Samples of the Alamblak language are presented in an orthography which is based on the phonological analysis in Part Two.

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.

1.5.1 Abbreviations

A(ct)	Actor
Ad	Adessive
AD	Adessive (e.g., marker/NP)
Ag	Agent
ADJ	Adjective
ADV	Adverb
Al	Allative
AL	Allative
Aff	Affective
B	Base
BEN	Benefactive
C	Consonant
CAUS	Causative
CL	Clause
CMPLX	Complex
CO	Conjoining
COM	Comitative
CONJ	Conjunction
COOR	Coordinate
COP	Copula
CPL	Completive
Ctr	Controlled
D	Dual
C.CAUS	Direct Causative
DA	Different Actor marker
DE	Direct Event
DECL	Declarative
DEP	Dependent
DEM	Demonstrative
Der	Derivation
D.Ins	Direct Instrument
DP	Direct Physical
El	Elative
ELEV	Elevational
EMP	Emphatic
E/R	Emphatic/Reflexive
EQ	Equative
Exp	Experiencer
F	Feminine
For	Force
G.DEP	General Dependent Marker
G.REL	General Relative Clause
G.SET	General Setting
GEN	Genitive
HORT	Hortative
IMPER	Imperative
IMPF	Imperfective
IMP/HOR	Imperative/Hortative
Inal Poss	Inalienable Possession
INCHO	Inchoative
INF	Infinitive
In.Ins	Indirect Instrument
In.Loc	Interior Locative
In.Mod	Inner Modifier
In.Obj	Inner Object
INS	Instrument
INTERR	Interrogative
I.PST	Immediate Past Tense
IRR	Irrealis
KIN	Kinship
LIG	Ligature
LIM	Limiter
Loc	Locative
LOC	Locative
M	Masculine
Ma	Manner
M.Ins	Manner Instrument
N	Noun
NAS	Nasal
Neg	Negative
NEG	Negative
NOM	Nominaliser
NP	Noun Phrase
N.PST	Near Past Tense
NUM	Numeral
Out.Mod	Outer Modifier
Out.Obj	Outer Object
P	Phonological
Pat	Patient
PERF	Perfective
PH	Phrase
PL	Plural
PNG	Person-number-gender
P.of R	Point of Reference
POSS	Possessive
POSSD	Possessed
PR	Present Tense
Pred	Predicate
PROC	Process
PROG	Progressive
PRON	Pronoun
PRSUP	Presupposition
PUR	Purpose
QNP	Question Noun Phrase
QUANT	Quantifier
Re	Reason

REAL	Realis
REC	Reciprocal
Ref	Referent
REF	Referent
REL	Relative
RESP	Resemblance Phrase
Rg	Range
R.PST	Remote Past Tense
SA	Same Actor Marker
S	Sentence/Syllable/Singular
SEQ	Sequence
S.SET	Specific Setting
SIM	Simultaneous
Subj	Subject
Sur Loc	Surface Locative
TEMP	Temporal Reference
Term	Terminator
TNS	Tense
U(nd)	Undergoer
Uctr	Uncontrolled
V	Vocoid
VB	Verb
VP	Verb Phrase
1	First Person
2	Second Person
3	Third Person

1.5.2 Symbols

#	Word boundary
##	Pause
$(X)^R$	X iterates
:	length on preceding segment
$\{^{x}_{y}\}$ x/y	x and y are alternatives
$\begin{bmatrix} a \\ b \\ - \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix}$	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/indicates syllable boundary
∿	alternating forms

⌜——⌝ delineates a constituent construction e.g.,

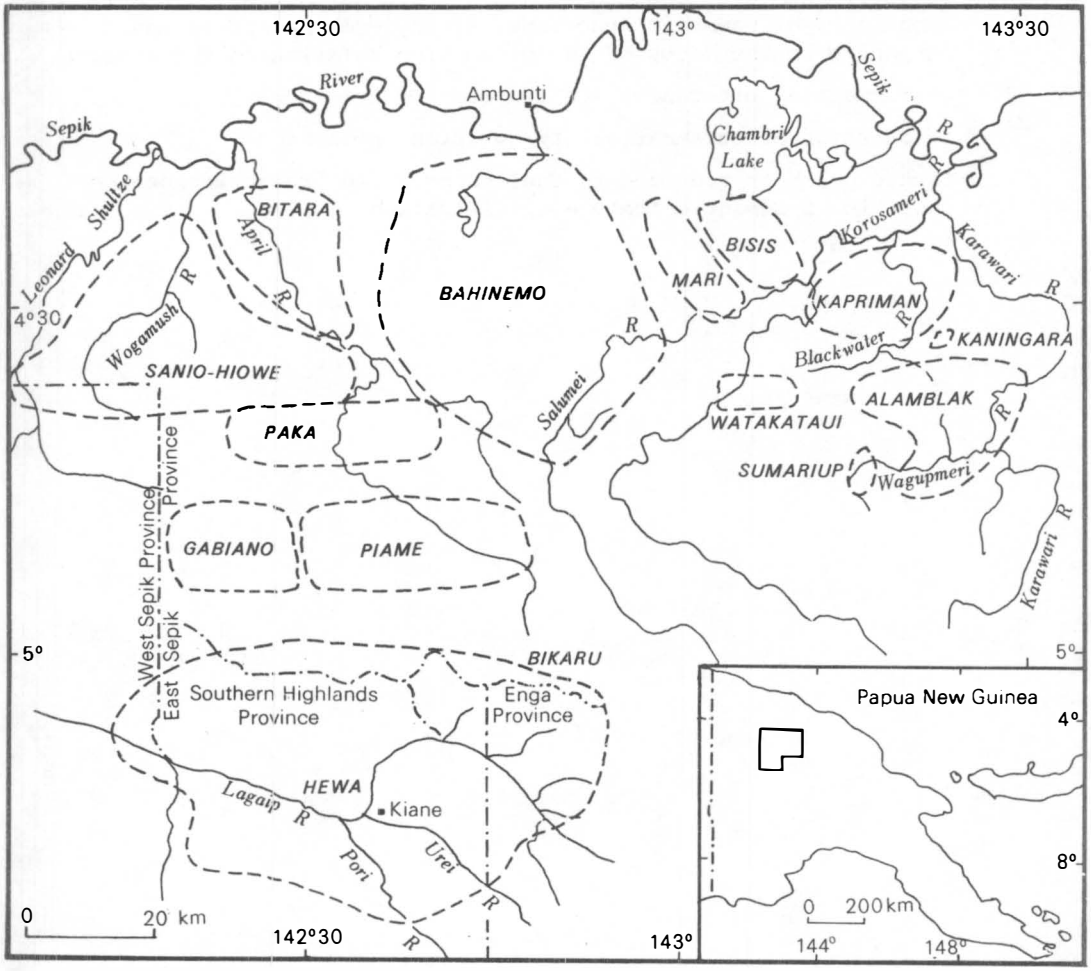
Subj	Pred
⌜yën-r⌝	⌜fnurr⌝

(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.

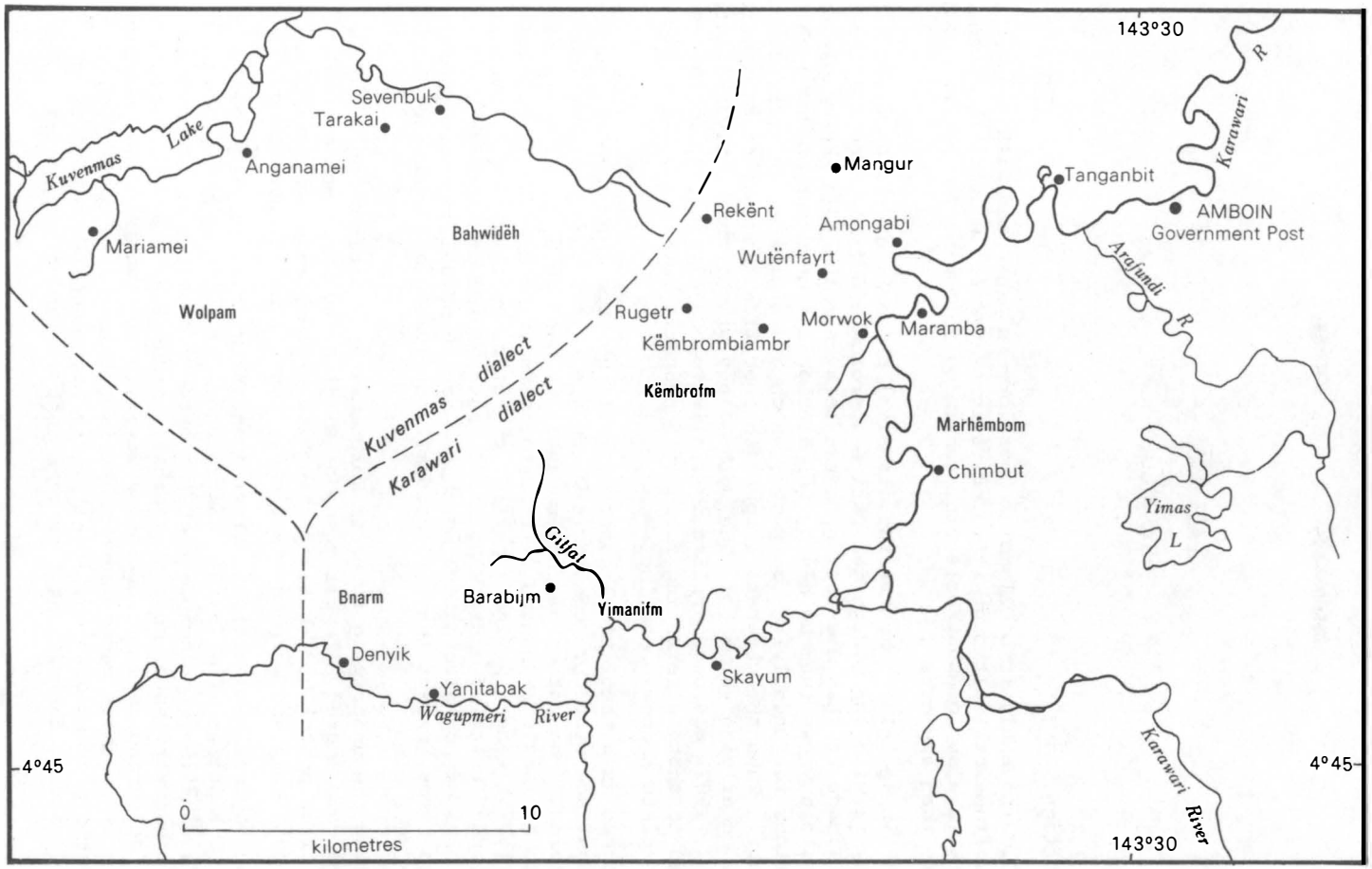
* ungrammatical utterances are starred

? of questionable grammaticality/question intonation

[ ] Square brackets are used to enclose phonetic transcriptions and phonetic or semantic feature specification.



Map 1: Sepik Hill languages



Map 2: Alamblak dialects and social groups

PART TWO

PHONOLOGY

2.0 Introduction

The following analysis of Alamblak phonology is presented within essentially a generative framework, although it is eclectic at certain points. The generative framework is also somewhat eclectic, generally following Sommerstein's (1977) approach more than any other.

Sommerstein (p.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 discussion 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 methodology of phonemic analysis (following Pike 1947, 1967) 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.

The phoneme as a theoretical construct will be used throughout to represent segments of surface structure contrasts which are relevant for contrasting underlying forms. The notion of phoneme as it is used here, however, is not equivalent to a classical phoneme. It is to be understood as an archisegment in Hooper's (1975) sense, having a partial phonetic specification. Phonemes are the component units of underlying (i.e. base) forms of morphemes. The underlying forms of non-alternating morphemes are identical to their (pronounceable) surface forms, except that all naturally derivable and redundant features are unspecified.

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 morphosyntactically conditioned alternations.

For phonologically conditioned alternates abstract underlying forms will be allowed. The degree of allowable abstractness is constrained by beginning with Hooper's (1975:555) principle that the base form must consist of "non-redundant representations of segments actually occurring in one or more surface allomorphs." We extend this constraint, however, by motivating other abstract underlying forms in those cases 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.

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, deletion, syllabification and coalescence as well as add or change feature values of segments. 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.

For purely morpho-syntactically motivated alternates, the base form will be that alternate which is least restricted in distribution. Descriptions of these alternating forms will be included in appropriate sections of the syntax, since those alternations are not the result of phonological processes. See, for example, the description of verb root allomorphs in section 3.1.1.5 and the discussion of pronominal forms in note 45.

The approach adopted here is considerably simpler than the classical morpho-phonemic 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 morpho-phonemic rule plus a redundant phonetic rule (i.e. a classical allophonic statement). This situation is yet another example comparable to what Halle (1959) described for Russian. The morphophonemic rules themselves, which would be needed to describe alveolar-palatal alternations in Alamblak, would be very cumbersome compared to the generative approach followed here. See note 18 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 (1967:301-302) terms, or neutralisation 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, in *alternating* forms where those 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.") In this description complete phonemic overlap is restricted to cases which can be phonetically motivated by appealing to alternating forms.

For example, given the forms in example 6 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.

6(a). /fawi-e-t/ ['ɸawiɛt] *It is the mouth of a river.*

(b). /yawy-e-t/ ['yawiɛt] *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 7 with those in 8.

7(a). /buy-e-t/ ['buyɛt] *It is a bamboo water-carrier.*

(b). /buy-t/ ['buč] *bamboo water-carrier*

(c). /buy-m/ ['bum] *bamboo water-carriers*

8(a). /yawy-e-t/ ['yawiɛt] *It is a dog.*

(b). /yawy-t/ ['yawč] *dog*

(c). /yawy-m/ ['yaᵒm] *dogs*

Fawi *river outlet* is a non-alternating morpheme and exhibits a different pattern.

9(a). /fawi-e-t/ ['ɸawiɛt] *It is a river outlet.*

(b). /fawi-t/ ['ɸawit] *river outlet*

(c). /fawi-m/ ['ɸawim] *river outlets*

The underlying /y/ in 'dog' has interacted with the person-number-gender marker to produce a palatoalveolar [č] (ex. 8(b)) as in 'bamboo water-carrier' (ex. 7(b)). The underlying /i/ in 'river outlet', although manifested in the same form as the /y/ of 'dog' in the (a) forms of examples 8 and 9, does not produce a palatoalveolar PNG marker in example 9(b), nor does it delete in 9(c).

This problem is not a minor one for Alamblak phonology. There are numerous phonetically alternating morphemes to be dealt with. The problem relates directly to the interpretation of the phonemic status of palatoalveolar contoids and non-central vocoids. There is considerable evidence for the coalescence of y with alveolars to produce palatals, and approximants (w and y) with central vowels to produce non-central vocoids. There is also evidence that in some environments both palatoalveolars 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, palatals 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 palatoalveolars 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 Alamblak phonology. This discussion will involve the question of vowel-less words in a wider theoretical context.

The problem of phonemic overlap and the status of palatoalveolar contoids and non-central vocoids will be dealt with in the segmental phonology.

The phonotactic patterns are discussed in section 2.2 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.

2.1 Segmental phonology

This section on segmental phonology will describe the contrastive phonetic units which specify the underlying forms of non-alternating morphemes and phonological rules whereby surface forms are derived from both non-alternating morphemes (allophonic rules) and phonologically conditioned alternating morphemes (the equivalent function of morphophonemics). Certain phonological rules (e.g., epenthesis, deletion, and vowel sequence rules) serve to conform underlying forms to the specifications of the phonotactics, which are discussed in section 2.2. Some of these rules operate on underlying forms before certain phonological rules and after others. All of 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.

2.1.1 Consonants

Table 3: Consonantal distinctive feature matrix (consonant phonemes)

	Front			
	Peripheral oral stricture	Medial oral stricture		Peripheral oral stricture
	Labial	Alveolar	Palatoalveolar	Velar
Stop - vd.	p	t	(č)	k
+ vd.	b	d	(j)	g
nasal	m	n	(ñ)	
Fricative	f	s	(š)	h
Approximant	w		y	
Tap		r		

Most of the palatoalveolar segments (excluding the approximant) are included as phonemes on the basis of a non-unique solution (i.e. one of a set of equally viable analyses). Their dubious status as phonemes is indicated by enclosing them in parentheses in Table 3.

Table 3 is a distinctive feature matrix[12] illustrating the contrastive oppositions of the consonant phonemes of Alamblak. The unspecified surface phonetic features will either be specified by the phonological rules (for distinguishing the major allophones of underspecified phonemes), or will be included in the phonetic feature chart (Table 5) as redundant features or phonetic detail specifications.

The phonetic manifestations of the consonants are summarised in the next two tables. Table 4 portrays the classical allophonic and morphophonemic manifestations of the underlying consonants. Table 5 specifies their phonetic detail at the systematic phonetic level.

Table 4: Allophonic and morphophonemic manifestations of underlying consonants

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 ɸ β t d s č j š k g x ɣ ř ř̈ ɣ̌ ɣ̈ m n ñ w y
Phonetic manifestations resulting in phonemic overlap	b b̌ č j š č j š g g* ñ ñ i

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

Phonetic transcriptions will follow the symbols on Table 5. All of the features identified on the chart are not necessarily indicated by the phonetic symbols used. For example, the precise points of articulation for the velars (velar and backed velar) are not distinguished in phonetic transcriptions. Certain phonetic details not included on Table 5 will be discussed elsewhere. For example, voiceless stops manifest light aspiration with variants of heavy aspiration being an artifact of higher level phonological phenomena; this is discussed in section 2.4 on intonation.

We will now examine the surface contrasts between the consonants starting with the non-palatoalveolars. The phones under consideration are underlined in the phonetic transcriptions.

Table 5: Systematic phonetic feature chart of contoids[1]

	p	pp	t	č	k	b	d	j	g	m	n	ñ	ŋ	p̄	b̄	s	š	x	ḡ	w	ᵒ	y	ř	Ř	řʏ	Řʏ
Voiced	-	-	-	-	-	+	+	+	+	+	+	+	+	-	+	-	-	-	+	+	+	+	+	-	+	-
Aspirated	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bilabial	+	+	-	-	-	+	-	-	-	+	-	-	-	+	+	-	-	-	-	+	+	-	-	-	-	-
Alveolar	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
Backed Alveolar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+
Palatal	-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-	+	-	-	-	-	+	-	-	-	-
Velar	-	-	-	-	+	-	-	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
Backed Velar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-
Stop	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
Homorganic Fricative Release	-	+	-	+	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nasal	-	-	-	-	-	-	-	-	-	+	+	+	+	-	-	-	-	-	-	-	-	-	-	-	-	-
Flat Fricative	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	+	+	-	-	-	-	-	-	-
Grooved Fricative	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-
Tap	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+
Approximant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	-	-	-	-
Syllabic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

[1]Acoustic measurements have not been made. The sonority of the nasals, high frequency energy of the sibilants, and high ratio of low to high frequency energy of grave segments may be relevant for certain phonological rules where these segments are the input or a part of the structural description of the rule.

2.1.1.1 Non-palatoalveolars

2.1.1.1.1 Contrasts

Stops

/p/ vs. /b/

10(a). /pikt/ [ˈpikɨt] *coconut shell bowl*
(b). /bikatit/ [biˈkatit] *point*
(c). /bɨkt/ [ˈbɨkɨt] *locust*
(d). /tept/ [ˈtepɨt] *leech*
(e). /bebt/ [ˈbebɨt] *bad*
(f). /bupam/ [ˈbupam] *water*

/t/ vs. /d/

11(a). /thit/ [tɨˈɡit] *turtle*
(b). /dhirt/ [dɨˈɡɪɹ̆t] *widow*
(c). /këtë/ [ˈkɛ̈ˈtɛ̈] *later*
(d). /kadi/ [ˈkaˈdi] *Be quiet.*

/k/ vs. /g/

12(a). /kuñm/ [ˈkuñ·ʊm][13] *houses*
(b). /guñm/ [ˈguñʊm] *fireflies/stars*

Stops and Fricatives

Bilabials

13(a). /pikm/ [ˈpikɨm] *coconut shells*
(b). /bëkm/ [ˈbɛ̈kɨm] *plenty*
(c). /fëkm/ [ˈɸɛ̈kɨm] *They vomited.*

Alveolars

14(a). /tuim/ [tuˈim] *eyebrows*
(b). /suim/ [suˈim] *skirts*

Velars

15(a). /kimt/ [ˈkimɨt] *cassowary-bone daggar*
(b). /himt/ [ˈximɨt] *red ant*
(c). /gim/ [ˈgim] *wild sago palms*
(d). /fëkt/ [ˈɸɛ̈kɨt] *She vomited.*
(e). /fëht/ [ˈɸɛ̈ɣɨt] *pig*
(f). /bɨdgt/ [ˈbɨdɨgɨt] *spoiled/wet*
(g). /bɨndhort/ [ˈbɨndɨɣoɹ̆t] *cassowary*

Fricatives

16(a). /fëkt/ [ˈp̲ëkɨt] *She vomited.*

(b). /hɨkt/ [ˈx̲ɨkɨt] *thorn fish trap*

(c). /suit/ [s̲uˈit] *skirt*

(d). /hukt/ [ˈx̲ukɨt] *a ripe (one)*

Contrasts involving alveolar /s/ are limited at best. The /s/ phoneme will be discussed in greater detail in section 2.1.1.2 along with the palatoalveolars.

Nasals

17(a). /nungwar/ [ˈn̲uŋgwaɎ̌] *bird*

(b). /ñungwër/ [ˈñ̲uŋgwoɎ̌] *He sounds.*

(c). /ftonkëmt/ [ftonˈk̲ëmɨt] *You* (pl) *fried it.*

(d). /wañkëmt/ [wañˈk̲ëmɨt] *You* (pl) *heard it.*

(e). /mëmkɨyrt/ [ˈmëm̲kɨɎ̌ʏš] *type of dove*

Taps and stops

18(a). /rëht/ [ˈɎ̌ë̲gɨt] *clay bowl*

(b). /tëhmët/ [ˈt̲ëgmët] *She stood.*

(c). /doht/ [ˈd̲ogɨt] *canoe*

(d). /barit/ [ˈbaɎ̌it] *widespot in river, lake* (F)

(e). /watit/ [ˈwat̲it] *hand drum*

(f). /kadi/ [ˈkaˈd̲i] *quiet*

2.1.1.1.2 Phonological rules

Fricatives

The peripheral fricatives (/f/ and /h/) are manifested as voiceless or voiced fricatives and voiced stops as the Fricative Assimilation rules indicate.

Fricative Voicing Assimilation:

$$\begin{bmatrix} +\text{per} \\ +\text{fric} \end{bmatrix} \rightarrow \left\{ \begin{array}{ll} [+\text{vd}] & / \begin{bmatrix} +\text{vd} \\ -\text{nas} \end{bmatrix} \text{——} [+\text{vd}] \\ [-\text{vd}] & /\text{elsewhere} \end{array} \right\}$$

According to the above rule peripheral fricatives occur voiced when flanked by voiced segments where the preceding segment is not a nasal. They occur voiceless following nasals and next to pause or voiceless segments.[14] Fricative voicing assimilation is illustrated by the forms in example 19.

19(a). /fëfhaf/ [ˈp̲ëb̲ɨg̲ap̲] *dried fruits*

(b). /riftkfët/ [ˈɎ̌ip̲tkɨb̲ët] *to flatulate*

(c). /miyakfɨnah/ [miyakp̲ɨˈnag̲] *get arriving down*

19(d). /yarimfɨnah/ [yaɾ̆imp̪ɨ'nag̪] *arrive toward and level with the speaker*

(e). /hahit/ ['x̲a'g̪it] *duck*

(f). /tathayma/ [tat'x̲ima] *They hit (and) gave (it) to me.*
They hit (something) affecting me.

The Fricative Voicing Assimilation rule supplies input for the Fricative Articulation Assimilation (FAA) rule.

Fricative Articulation Assimilation:

$$\begin{bmatrix} +\text{per} \\ +\text{fric} \\ +\text{vd} \\ \alpha\text{ point} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{st} \\ -\text{nas} \\ \alpha\text{ point} \end{bmatrix} \quad / \quad \underline{\qquad} \quad \begin{bmatrix} +\text{st} \\ \alpha\text{ point} \end{bmatrix}$$

By this rule voiced peripheral fricatives become stops at the same point of articulation as the underlying fricative when followed by an oral or nasal stop at that point of articulation. This rule applies only to alternating forms.[15] Complete phonemic overlap occurs between underlying /f/ and /b/ (cf. Table 4), but underlying /h/ has not been observed in the context required by the FAA rule and thus phonemic overlap of /h/ and /g/ has not been observed. The effects of this rule are illustrated by examples in 20 and 21.

The examples of 20 illustrate two of the three possible phonetic manifestations of the morpheme /-af/ 'prolative aspect'.

20(a). /wañafhatɛ̈/ [wañab̪ɨ'g̪atɛ̈] *having heard and separated*

(b). /wañafmɛ̈m/ [wa'ñabmɛ̈m] *They heard and separated.*

(c). /wañafbugamɛ̈m/ [wañab:u'gamɛ̈m] *They heard all and separated.*

The underlying /f/ in af contrasts with an underlying /b/ in beb *bad* in examples 20(a) and 21(a), but they are phonetically identical in the (b) and (c) examples.

21(a). /wañbebhatɛ̈/ [wañbeb̪ɨ'g̪atɛ̈] *having heard badly*

(b). /wañbebmɛ̈m/ [wañ'beb̪mɛ̈m] *They heard badly.*

(c). /wañbebbugamɛ̈m/ [wañbeb̪:u'gamɛ̈m] *They heard all badly.*

Alternations involving medial fricatives will be discussed in section 2.1.1.2 on Palatoalveolars.

Nasals

Alternations involving medial nasals will be discussed in section 2.1.1.2 on Palatoalveolars. No other phonological rules change the distinctive feature specification of the nasals. A neutralisation of nasal contrasts does occur in certain environments, however.[16] This phenomenon is described by the Nasal Assimilation (NA) rule below.

Nasal Assimilation:[17]

$$[+\text{ nasal}] \rightarrow [\alpha\text{ point}] \;/\; ____ \left\{ \begin{bmatrix} +\text{ vd} \\ +\text{ st} \\ -\text{ ns} \\ -\text{ front} \end{bmatrix} \right.$$
$$\left. \begin{bmatrix} -\text{ vd} \\ +\text{ st} \\ -\text{ ns} \\ +\text{ pal-alv} \end{bmatrix} \right\}$$

The Nasal Assimilation rule specifies that an underlying nasal (phonemically written /n/ here) assimilates to the same point of articulation of non-front, non-nasal, voices stops (viz., d, j, g) and the voiceless palatoalveolar stop (č). The rule in effect describes a neutralisation of contrast in these environments; hence no nasal of a heterorganic articulation immediately precedes these stops. The examples in 22 illustrate the Nasal Assimilation rule.

22(a). /nandëmr/ [nan̪'dɛ̈mɨr̆] *snake*

(b). /nanjërt/ [nañ̲'jɛ̈r̆t] *mayfly*

(c). /nungwar/ ['nuŋ̲gwar̆] *bird*

(d). /mančifr/ [mañ̲'čiɬɨr̆] *millipede*

Tap

The phonetic manifestations of /r/ are specified for [- voiced] ([r̆]) and [+ voiced] ([ř]) in the environments indicated in the Tap Voicing rule below.

Tap Voicing:

$$[+\text{ tap}] \rightarrow \left\{ \begin{array}{ll} [-\text{ voiced}] \;/ & \left\{ \begin{array}{l} ___\#\# \\ \ldots \begin{bmatrix} +\text{ st} \\ -\text{ vd} \end{bmatrix} \ldots \end{array} \right\} \\ [+\text{ voiced}] \;/ & \text{elsewhere} \end{array} \right.$$

The Tap Voicing rule indicates that /r/ is voiceless next to voiceless stops and preceding pause, and voiced elsewhere. These manifestations are illustrated in example 23.

23(a). /barir/ ['ba r̲̆ɹr̆] *a wide spot in a river, lake* (M)

(b). /bdërpam/ [bɨ'dɛ̈r̲̆pam] *dirt*

(c). /krenjipam/ ['kr̲̆æñjɹpam] *clay*

(d). /rɨpt/ ['r̲̆ɨpɨt] *coconut-shell spoon*

Approximant /w/

The bilabial approximant /w/ has the phonetic realisations specified by the 'w' Lowering rule.

'w' Lowering:

$$\begin{bmatrix} +\text{approx} \\ +\text{labial} \end{bmatrix} \rightarrow \left\{ \begin{array}{ll} [^{o}] & / \begin{bmatrix} V \\ -\text{hi} \end{bmatrix} \text{———} \begin{bmatrix} C \\ +\text{peripheral} \end{bmatrix} \\ [^{u}] & / \text{ elsewhere} \end{array} \right\}$$

24(a). /tonewkë/ [to'ne$^{o}_{_}$kë] *You* (PL) *are running.*

(b). /tonewf/ [to'ne$^{o}_{_}$ɸ] *They* (D) *are running.*

(c). /tonewm/ [to'ne$^{o}_{_}$m] *They* (PL) *are running.*

(d). /tonewt/ [to'ne$^{u}_{_}$t] *She is running.*

(e). /pɨthiwm/ [pɨtɨ'ɡi$^{u}_{_}$m] *They* (PL) *are talking.*

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

Rules dealing with epenthesis, deletion, fusion, and syllabification of approximants are particularly pertinent to the discussion of vowels and palatoalveolars. These rules, therefore, are discussed in the sections dealing with vowels and palatoalveolar consonants.

2.1.1.2 Palatoalveolars

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

The clearest evidence for contrastive palatoalveolars is illustrated in examples 25-29.

/č/ vs. /t/

25(a). /kučr/ ['kuč̲ɨr̆] *crow*

(b). /nakutr/ [na'kut̲ɨr̆] *He yelled.*

/j/ vs. /d/

26(a). /jingt/ ['j̲iŋgɨt] *insect basket*

(b). /difɬ/ ['d̲iɬɨt] *white soil*

(c). /nanjërpam/ [nañ'j̲ër̆pam] *mayfly soup*

(d). /nandëmr/ [nan'd̲ëmɨr̆] *snake*

/š/ vs. /s/

27(a). /šuhmët/ ['š̲uɣɨmët] *She fell.*

(b). /suit/ [s̲u'it] *skirt*

/š/ vs. /t/

28(a). /mašat/ ['maš̲at] *much*

(b). /mitat/ ['mi t̲at] *(a kind of snake (death adder?))*

/ñ/ vs. /n/

29(a). /ñungwër/ ['ñ̲uŋgwoř] *He sounds.*

(b). /nungwar/ ['n̲uŋgwař] *bird*

Palatoalveolars (with the exception of the approximant 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 palatoalveolars (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 30(a) and 31(a) but they are identical ([j]) in the (b) forms.

30(a). /doht/ ['d̲oʁɨt] *canoe*

(b). /hay doht/ [xa'j̲oʁɨt] *ironwood canoe*

31(a). /jubt/ ['j̲ubɨt] *child's bow*

(b). /hay jubt/ [xa'j̲ubɨt] *ironwood child's bow*

The palatoalveolars which derive from underlying alveolars are derived according to the Palatal Assimilation rule (Pal Assim).[18]

Palatal Assimilation:

[+ alveolar] → [+ palatal] / [+ palatal] _____

32. /kuñ -t/ ['kuñ -č] *house*
house-3SF

The underlying form of the third-person-singular-feminine suffix (-t) in 32 is the same as one of its alternating forms (examples 33 and 34) from which the palatoalveolar form in 32 may be naturally derived.

33. /kuñ - e - t/ ['kuñ - ɛ - t] *It is a house.*
- COP -

34. /yën - t/ ['yɛ̈n - t] *girl*
child-3SF

Certain forms require that an abstract /y/ be postulated in their underlying forms.

35. /nunay - t/ [nuna - č] *earthquake*
earthquake-3SF

The underlying form of *earthquake* (nunay) is the same as one of its alternating forms (example 36) from which the surface form [nuna] in example 35 may be naturally derived.

36. /nunay - e - t/ ['nunay - ɛ - t] *It is an earthquake.*
-COP-

The full derivation of nunač in example 35 requires that the approximant y delete preceding palatoalveolars as described by the 'y' Deletion I rule in section 2.1.3.2.[19]

We have suggested (section 2.0) 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 predict all palatoalveolars by analysing them as fusions of the palatal approximant and an alveolar consonant.

A strong point in favour of the more abstract solution is the distributional constraint 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 next to alveolars in underlying forms but that sequence is replaced with a palatoalveolar consonant in surface manifestations. This suggests that palatoalveolars which are in non-alternating morphemes may derive from an underlying y plus alveolar also. 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 significant in themselves, e.g. E. Pike's argument from distributional criteria, the abstract analysis is rejected here in favour of a more concrete analysis. The first reason for our conclusion here relates to the theoretical problem of abstractness. As Hyman (1975:84) has commented, "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 contemporary 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. As indicated in the introduction to this section, abstract segments have been restricted to alternating forms which are classed in the same paradigm with alternating forms that manifest the abstract segment in question in one of their surface alternations.

A second alternative analysis of the palatoalveolars 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 palatoalveolar consonants (plus the approximant /y/). It is possible to specify phonetic variants of /s/, with some exceptions, as in Rule A.

Rule A:

$$/s/ \rightarrow \begin{cases} [s] \sim [š] \;/\; \#____ \\ [š] \;/\; \ldots[+\,St]\ldots \\ [š] \sim [č] \;/\; \text{elsewhere} \end{cases}$$

37(a). /suhkfët/ ['suxkɨɓɛ̈t] ~ ['šuxkɨɓɛ̈t] *to fall*

(b). /fuspam/ ['ɸuspam] *dust*

(c). /bisët/ ['bɪsɛ̈t] ~ ['bɪčɛ̈t] *tooth*

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

While arguing for the non-phonemic 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 palatoalveolar [š] derives in one instance from a fusion of y and [s], it seems strange that the resulting palatoalveolar should in some cases freely fluctuate with the alveolar [s] with no sign of the proposed underlying y. If the abstract analysis describes a prehistorical stage, then it appears that these particular palatoalveolars 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 Alamblak language[20], this analysis concludes that three phonemes */č/, */š/, and */s/ have collapsed into one synchronic phoneme /s/.

While the analysis of the voiceless palatoalveolars 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 Alamblak 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 palatoalveolar /š/. Rule A suggests furthermore, that [č], [š], and [s] are either freely fluctuating or are in complementary distribution. There are, however, several exceptions to this part of Rule A also. For example, the rule states that [s] and [š] fluctuate word intially. One exception to this (/suit/ *skirt*) has already been mentioned. Example 38 manifests [š] and [č] fluctuating initially, and is thus another exception.

38. /sif+nëht/ [šɪb+'nɛ̈g+it] ∿ [čɪb+'nɛ̈g+it] *empty*

Example 39 manifests all three ([s], [š] and [č]) fluctuating initially.

39. ['simbut] ∿ ['šɪmbut] ∿ ['čɪmbut] (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.

40. ['mašat] *much*

41. [duky'ač+m] *big mouth fish*

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

42. [na{s, š, č}uŋ'gwaš+m] *guardian spirits*

This type of sporadic fluctuation of forms which are not completely amenable to phonological generalisation is suggestive 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 realisation of some forms therefore Rule A will be retained in the description as a diachronic tendency rule and words which do not conform to that general tendency will be bracketed

with vertical lines (| |) indicating that the form is one of a set of morphologically defined allomorphs. Thus /fuspam/ *dust* is predictably [ˈpuʂpam] from Rule A; /mašat/ *much* and /dukyačɨm/ *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 preditable allomorphs will be written in their single underlying form; e.g. /kuñt/ *house* is predictably [ˈkuñč] by the Palatal Assimilation rule.

2.1.1.3 Interpretation

The analysis of consonants which has been proposed thus far 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 $\{{}^{C}_{\#}\}{}^{i}V$, $CV^{i}\{{}^{C}_{\#}\}$, $\{{}^{C}_{\#}\}{}^{u}V$, 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/

43(a). /kyakt/ [k^{i}ˈakɨt] *door*

(b). /akianr/ [akiˈ^{i}anɨř] *Let me tie him up.*

There is no morphological justification for the non-syllabic [^{i}] in example 43(b) to be included in the underlying form. It is merely an epenthetic approximant inserted by the 'y' Epenthesis rule (section 2.1.3.1). Given that fact, there is no way to derive both the syllabic [i] of 43(b) and the non-syllabic [^{i}] of 43(a) from the same phoneme (i.e., /i/) by natural phonological processes. If the [i] in 43(a) were an underlying /i/, then an epenthetic [y] should intervene between it and the following vowel exactly as it has in example 43(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 [^{i}] occurs. The interpretation of [^{i}] in this position as underlying /y/ by analogy with interpretations of [^{i}] in other environments does not add any complexity to the phonology in terms of consonant sequences. Formally an [^{i}] in this position often functionally parallels palatoalveolar phones and is in these cases best considered to be consonantal (cf. the Palatal Assimilation rule).

/w/ vs. /u/

44(a). /yowt/ [ˈ^{i}o^{u}t] *mosquito*

(b). /toukfët/ [ˈtoukɨb̥ɛ̈t] *to dig*

(c). /wompam/ [ˈ^{u}ompam] *again*

(d). /buwohr/ [buˈ^{u}oɡɨřˇ] *blow fish*

(e). /yuorht/ [^{i}uˈořɨɡɨt] *river reed*

The contrast between a syllabic and non-syllabic high back vocoid is based on relative duration of timing. The high back vocoid in example 44(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 in (b). Examples 44(c)-(e) do not provide cases of clear contrast but the non-syllabic [ᵘ]'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 2.2.1) they always occur with a consonant onset, thus an additional syllable pattern, VV, would result from interpreting the [ᵘ]'s of (c) and (d) as vowels. Furthermore, vowel-initial words are rare. If word-initial [ⁱ] and [ᵘ] were interpreted to be vowels, approximately 18% of Alamblak 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 consonants. That interpretation in many cases results in consonant approximant 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. /pʸ/ but no /bʸ/, /dʸ/ but no /tʸ/).

[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. /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 labialised-consonant-final roots in the present tense and non-labialised-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:

Typologically it is common in Papua New Guinea for the voiced stop series to be prenasalised. This is especially true for Sepik languages. There is, furthermore, some residual evidence of a prenasalised stop series in Alamblak historically. For example, the neutralisation of nasal articulation before /d/, /j/, /g/, and /č/ (nasals being homorganic with the following stop) is suggestive of prenasalisation. Some voiced stop initial morphemes become

prenasalised word-medially in complex constructions, a likely context for archaic reflexes to be retained. For example, /mɨy/ *tree* plus /giñt/ *protrusion* renders [mɨŋ'gɪñč] *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 prenasalised 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-prenasalised, voiced stops occur both word initially and medially. Contrasts between simple and prenasalised stops would occur, therefore, with a unit interpretation of nasal plus homorganic stop, e.g. /bangot/ ['baŋgot] *knee* vs. /bugont/ ['bugont] *buttress*. Contrasting series of simple vs. prenasalised voiced stops is typologically more questionable than having a simple voiced stop series in place of a prenasalised 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.

2.1.2 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.

The phonetic manifestations of the vowels are indicated in Table 6. The conditions under which each phone is manifested are stipulated by the phonological rules in this section.

Table 6: Vowels

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

Table 7: Phonetic manifestations of underlying segments and sequences													
Underlying segments and sequences	i	e	ɨ	ë	a	u	o	y	ɨy	ay	uy	oy	aw
Non-overlapping phonetic manifestations	i ɪ	e ɛ	ɨ ʊ	ɛ̈ ɔ	a ə	u	o	y		ay	uy	oy	aw
Phonetic manifestations resulting in phonemic overlap	i e ɛ		ɨ ɨ o ʊ	ɛ̈ o ʊ a	a u	u	o ʊ*	y	i ɨ	i e ɛ/_[+periph] ɨ/_[+medial] a [+pal-alv.]	u	o	u

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

2.1.2.1 Non-central vowels

2.1.2.1.1 Contrasts

/i/

The high front vowel (/i/) contrasts with other vowels as illustrated in examples 45-48.

/i/ vs. /e/

45(a). /tikt/ ['ti̲kɨt] *platform*

(b). /tekt/ ['te̲kɨt] *river*

/i/ vs. /ɨ/

46. /tɨkt/ ['tɨ̲kɨt] *(a kind of tree)*

/i/ vs. /ë/

47(a). /kikwa/ ['ki̲kwa] *I am painting.*

(b). /këkwa/ ['kɛ̲̈kwa] *I am vomiting.*

/i/ vs. /u/

48. /kukwa/ ['ku̲kwa] *I am bathing.*

Table 8: Systematic phonetic feature chart of syllabics

	i	ɪ	e	ɛ	ɨ	ə	ɛ̈	a	u	ʊ	o	·o	ɔ
height	5	4	3	2	5	3	2	1	5	4	3	3	2
tense	+	−	+	−	+	+	−	−	+	−	+	+	−
front	+	+	+	+	−	−	−	−	−	−	−	−	−
short	−	−	−	−	+	−	−	−	−	+	−	+	−
round	−	−	−	−	−	−	−	−	+	+	+	+	+
syllabic	+	+	+	+	+	+	+	+	+	+	+	+	+
voiced	+	+	+	+	+	+	+	+	+	+	+	+	+

/e/

The mid front vowel (/e/) contrasts with the other vowels as illustrated in examples 45 and 49-53.

/e/ vs. /ɨ/

49(a). /tengt/ ['tɛŋgɨt] *to blow*

(b). /tɨngt/ ['tɨŋgɨt] *mouth*

/e/ vs. /ë/

50(a). /bekfat/ ['bekɨbat] *place for securing canoes*

(b). /bëkm/ ['bɛ̈kɨm] *plenty*

/e/ vs. /a/

51. /tangt/ ['taŋgɨt] *firewood bag*

/e/ vs. /o/

52. /tongt/ ['toŋgɨt] *(a kind of carving)*

/e/ vs. /u/

53. /bukɨtt/ ['bukɨtɨt] *head waters*

/u/

The high rounded vowel (/u/) contrasts with other vowels as illustrated in examples 47(a), 48, 50(a), 53, and 54-56 below.

/u/ vs. /ɨ/

54(a). /bukɨtt/ ['bukɨtɨt] *head waters*

(b) /bɨkt/ ['bɨkɨt] *locust*

/u/ vs. /ë/

55(a). /kukwa/ ['kukwa] *I am bathing.*

(b). /këkwa/ ['kɛ̈kwa] *I am vomiting.*

/u/ vs. /o/

56(a). /kukrwët/ [ˈkuk̲ɨřɨwʊt] *It is burning.*

(b). /kokrwët/ [ˈko̲kɨřɨwʊt] *It dislikes.*

/o/

The mid rounded vowel (/o/) contrasts with other vowels as illustrated in examples 49(a), 52, 56, and 57-59 below.

/o/ vs. /ɨ/

57(a). /tongt/ [ˈto̲ŋgɨt] *(a kind of carving)*

(b). /tɨngt/ [ˈtɨ̲ŋgɨt] *mouth*

/o/ vs. /ë/

58(a). /rohkfët/ [ˈřo̲xkɨɓët] *to be seated*

(b). /rëhkfët/ [ˈřë̲xkɨɓët] *to boil*

/o/ vs. /a/

59. /tangt/ [ˈta̲ŋgɨt] *firewood bag*

2.1.2.1.2 Phonological rules

/i/

An underlying high front vowel is phonetically modified by adding the features [-tense] and [+tense] as specified by the 'i' Tensing rule.

'i' Tensing:

$$\begin{bmatrix}+\text{hi}\\+\text{fr}\end{bmatrix} \rightarrow \begin{cases} [-\text{tense}] \sim [+\text{tense}] \,/\, [\text{y}] \underset{[-\text{stress}]}{_____} \\ [-\text{tense}] \,/\, \begin{cases} _____ \begin{cases}[+\text{tap}]\\[+\text{palatoalveolar}]\end{cases} \\ [+\text{palatoalveolar}] _____ (\text{C})\ * \end{cases} \\ [+\text{tense}] \,/\, \text{elsewhere} \end{cases}$$

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

The phonetic realisations of underlying /i/ are illustrated in 60-64.

/i/ → [i]

60. /watit/ [ˈwati̲t] *hand drum* (feminine)

/i/ → [ɪ] / _____[+vibrant]

61. /watir/ [ˈwatɪŘ] *hand drum* (masculine)

/i/ → [ɩ] / [+ palatoalveolar] _____

62. /ñiñt/ [ˈñɩ̲ñč] *centipede*

/i/ → [i̟] / _____ [+ bilabial] ##

63. /kafnjim/ [ˈkab̟i̟ñji̲m] *(a lineage name)*

/i/ → [ɩ] ∿ [i̟] / [y] _____
[-stress]

64. /yinemt/ [yɩˈnem̟i̟t] ∿ [yi̟ˈnem̟i̟t] *grandchild*

/e/

An underlying mid front vowel is phonetically modified according to the next two rules. By the tensing rule the features [- tense] and [+ tense] are specified under certain circumstances.

'e' Tensing:

$$\begin{bmatrix}+\text{ mid}\\+\text{front}\end{bmatrix} \rightarrow \begin{cases}[-\text{ tense}] \;/ \begin{cases}\underline{\quad\quad}\,[-\text{ stress}]\\ \underline{\quad\quad}\,[+\text{ stress}]\end{cases} \begin{cases}C \quad \#\\ [+\text{ labial}]\end{cases}\\ [+\text{ tense}] \;/ \quad \text{elsewhere}\end{cases}$$

The first part of the above rule produces phonemic overlap in some environments with an underlying /ay/ sequence. These cases will be discussed under the Low Front Coalescence rule which deals with the coalescence of underlying /ay/ resulting in a front vocoid (cf. section 2.1.3.3).

65. /metet/ [ˈme̲tɛ̲t] *She is a woman.*

/bi̟ket/ [bi̟ˈkɛ̲t] *It is a locust.*

The next rule is a dissimilation rule whereby a mid front vocoid is raised to a high vocoid. This rule is functionally equivalent to the 'a' Dissimilation rule; both rules raise the specified vocoid the equivalent of one height value on the phoneme chart. They are distinct rules, however, in that they have different structural descriptions.

'e' Dissimilation:

$$\begin{bmatrix}+\text{ mid}\\+\text{ front}\end{bmatrix} \rightarrow [\text{i}] \;/\; \underline{\quad\quad} \begin{bmatrix}+\text{ mid}\\+\text{ front}\end{bmatrix}$$

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. section 2.1.4); that derivation will be most easily illustrated after the introduction of more phonological rules. This rule is

only tenuously motivated since it is required to derive an alternate of the abstract form /nayay/ *come*. It is included here for two reasons. It parallels the well motivated Low Dissimilation rule. 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 rules. This is true for all but the final step in the derivation of the [nʲɛm] alternate of /nayaym/ *They came*.

/o/

An underlying mid rounded vowel is phonetically modified according to the 'o' Shortening rule. This modification results in partial overlap with an underlying /ɨ/ in different environments (cf. 'ɨ' Assimilation in section 2.1.2.2.2).

'o' Shortening:

$$\begin{bmatrix} +\text{ mid} \\ +\text{ rnd} \end{bmatrix} \rightarrow [+\text{ short}] \;/\; [+\text{ velar}] _____ [+\text{ alveolar}]$$

66(a). /hot/ ['x·o̲t] *adze*

(b). /bakot/ ['bak·o̲t] *(a kind of sea shell)*

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

67(a). /ho - e - t/ ['xo̲ɛt] *It is an adze.*

(b). /bako - e - t/ ['bako̲ɛt] *It is (a kind of sea shell).*

2.1.2.2 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 2.3 that problem will be dealt with in detail. Secondly, modifications of central (i.e. non-front, unrounded) vowels and fusions of central vowels with approximants 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 approximants. The three-central-vowel hypothesis will be discussed as an alternative solution later in this section.

2.1.2.2.1 Contrasts

/a/

The low vowel (/a/) contrasts with other vowels as illustrated in examples 49(a), 51, 57(a), 59 and 68 below.

/a/ vs. /ë/

68(a). /bakom/ ['ba̲kom] *(a kind of sea shell* (pl)*)*

(b). /bëkm/ ['bɛ̲̈kɨm] *plenty*

/ë/

The mid unrounded non-front vowel (/ë/) contrasts with the other vowels as illustrated in examples 47, 50, 55, 58, 68, and 69 below.

/ë/ vs. /ɨ/

69(a). /bëkm/ ['bɛ̱̈kɨm] *plenty*

(b). /bɨkm/ ['bɨ̱kɨm] *locusts*

/ɨ/

The high unrounded non-front vowel (/ɨ/) contrasts with other vowels as illustrated in examples 45(a), 46, 49, 54, 57, and 69.

2.1.2.2.2 Phonological rules

/a/

An underlying low vowel is raised to a mid vocoid as indicated by the 'a' Dissimilation rule.

'a' Dissimilation:

$$[+\text{low}] \rightarrow [+\text{mid}] \;/\; ____\; C\ ([\text{ɨ}]\ C)_0\ [+\text{low}]$$

The 'a' Dissimilation rule states that [a] is raised to a mid vocoid 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 the above rule have not yet been completely worked out.[21] 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 70 and 71.

70(a). /hingna-ni-rahr/ [xiŋgɨnɑ̱ni'ɾɑgɨɾ̌]
work -go-FUT.3SM
He will work (and) go.

(b). /hingna-rahr/ [xiŋgɨnə̱'ɾɑgɨɾ̌]
work -FUT.3SM
He will work.

71(a). /hi -rhwat-fɨn-në/ [xɪɾ̌ɨ'ɡwɑ̱tɨɓɨnɨnɛ̈]
give-FUT. -2D -1D
You will give to us.

(b). /hi -rhwat-fɨn-a/ [xɪɾ̌'ɡwo̱tɨɓɨna][22]
give-FUT. -2D -1S
You will give to me.

/ë/

An underlying /ë/ is susceptible to phonetic modification as specified by the next four rules. The Rounding Assimilation rule changes [- round] to [+ round] (i.e., [ɛ̈] becomes [ɔ]) in a prepause position following labials.

Rounding Assimilation:

$$\begin{bmatrix} +\text{ mid} \\ -\text{ fr} \\ -\text{ rnd} \end{bmatrix} \rightarrow [+\text{rnd}] \;/\; [+\text{ labial}]_____\#\#$$

In 72 /ë/ is manifested with no change in its prime features. Example 73 illustrates the rounding process.

72(a). /këtë/ [ˈkɛ̈tɛ̈] *later*

(b). /kit-wë-në/ [ˈkitwɛ̈nɛ̈]
go -IMPF-1D
We (two) are going.

73(a). /kit-wë-ø/ [kitwɔ] *You are going.*
2S

(b). /brbë/ [ˈbɨřɨbɔ] *nearby*

The 'ë - ɨ' Fluctuation rule is a low-level phonetic rule which describes the fluctuation of the mid and high central vowels in a pretonic position.

'ë - ɨ' Fluctuation:

$$\begin{bmatrix} +\text{ mid} \\ -\text{ fr} \\ -\text{rnd} \end{bmatrix} \rightarrow [+\text{ mid}] \sim [+\text{ hi}] \;/\; _____\ \text{C} \begin{bmatrix} \text{V} \\ +\text{ stress} \end{bmatrix}$$

74. /hemëkëmr/ [xemɛ̈ˈkɛ̈mɨřˇ] ∿ [xemɨˈkɛ̈mɨřˇ] *You* (pl) *gave him.*

The outputs of the above two rules are possible inputs for the Tense-Rounding Assimilation rule. The output of this rule results in potential phonemic overlap with /ë/, /a/, /o/ and /oy/.

Tense - Rounding Assimilation:

$$\begin{bmatrix} +\text{ mid} \\ -\text{ front} \\ -\text{ rnd} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{ tense} \\ +\text{ rnd} \end{bmatrix} \;/\; \left\{ \begin{array}{ll} \text{C}\ [\text{w}]\ _____ & \left\{ \begin{bmatrix} +\text{ periph} \\ +\text{ medial} \\ -\text{ nasal} \end{bmatrix} \right\} \\ [+\text{ labial}]\ _____ & [\text{w}]\ (\text{C}) \end{array} \right.$$

By this rule a central mid vocoid is manifested as [o] (tense and round) in either of two environments. The first subrule which makes the [ɔ] of the Rounding Assimilation rule [o] when followed by [w] is illustrated by example 75(c) below.

75(a). /hingnamë/ [xiŋgɨˈnamɔ̲] *You worked.*

(b). /hingnamët/ [xiŋgɨˈnamɛ̲̈t] *She worked.*

(c). /hingnamëwt/ [xiŋgɨnaˈmo̲wt] *She was working.*

With the Rounding and Tense-Rounding Assimilation rules, the alternating forms of the imperfective aspect become regularly derivable from -wë.[23]

Table 9: Phonetic present tense paradigm of kik *paint*

		Singular	Dual	Plural
1		'kikwa	'kikwɛ̈nɛ̈	kikwɛ̈nɛ̈m
2		'kikwɔ	kik'woɒɨn	kik'wokɛ̈
3	M	kikwoʀ̆	'kikwoɒ	'kikwom
	F	kikwot		

/ɨ/

An underlying /ɨ/ is phonetically modified according to the following assimilation rule.

'ɨ' Assimilation:

$$\begin{bmatrix}+\text{ hi}\\-\text{ fr}\\-\text{ rnd}\end{bmatrix} \rightarrow \left\{ \begin{bmatrix}+\text{ rnd}\\-\text{ tense}\end{bmatrix} \quad / \quad [\text{w}]____ \right.$$

$$\left. \begin{bmatrix}+\text{ rnd}\\+\text{ mid}\end{bmatrix} \quad / \quad [+\text{ labial}]____ \begin{bmatrix}+\text{ velar}\\+\text{ fric}\end{bmatrix} \right\}$$

The examples in 76 illustrate unmodified and modified phonetic manifestations of both an underlying /ɨ/ and an epenthetic [ɨ].[24] By the first subrule /ɨ/ becomes [ʊ] as in 76(b). By the second subrule /ɨ/ becomes (short) [·o] as in 76(c) and an epenthetic [ɨ] is manifested as (short) [·o] as in 76(d).

76(a). /bɨkm/ ['bɨkɨm] *locusts*

(b). /wɨtt/ ['wʊtʊt] *fat globule*

(c). /fɨht/ ['p·cɵ·ot] *wound*

(d). /fhat/ [p·o'ɵat] *egg*

The high, central vocoid is further modified according to the 'ɨ' Harmony rule.

'ɨ' Harmony:

$$\begin{bmatrix}+\text{ hi}\\-\text{ fr}\\-\text{ rnd}\end{bmatrix} \rightarrow \begin{bmatrix}\alpha\text{ rnd}\\\alpha\text{ hi}\end{bmatrix} \quad / \quad \begin{bmatrix}+\text{ short}\\-\text{ fr}\\\alpha\text{ rnd}\\\alpha\text{ hi}\end{bmatrix} \quad \text{C}____$$

An epenthetic [ɨ] harmonises with the vocoid of a preceding syllable according to the harmonising rule as illustrated in the second syllable of examples 76(a)-(c).

2.1.3 Phonotactically motivated rules

The rules discussed in this section differ from the phonetically motivated rules discussed in previous sections. Phonotactically motivated rules operate to satisfy the phonotactic constraints of the language. Some of these constraints are discussed in section 2.2 on phonotactics. The processes described here include epenthesis, deletion, syllabification, and coalescence. Many of the rules in this section interact with the phonological rules. For that reason we include their description here before discussing the ordering of rules.

2.1.3.1. Epenthesis

The epenthesis rule involving the high central vocoid will be discussed in section 2.3.2. The other epenthetic segment in the phonology is the approximant [y].

'y' Epenthesis:

$$\begin{bmatrix} +\ \text{V} \\ -\ \text{rnd} \end{bmatrix}_a \text{V}_b \rightarrow \begin{bmatrix} +\ \text{V} \\ -\ \text{rnd} \end{bmatrix}_a \text{y}\ \text{V}_b$$

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

The 'y' Epenthesis rule operates to remove surface sequences of an unrounded vocoid followed by another vocoid, when the second vocoid has an identical or lower articulation than the first.[25] Other means of restricting vowel sequences across syllable boundaries are described under phonotactics in section 2.2.1.

77(a). /wiet/ ['wiyɛt] *It is a lorikeet.*

(b). /tatmëa/ *['tatmëya] *I hit (something).*

The phonetic representation of example 77(b) is not specified since further modifications occur through coalescence rules which will be discussed in section 2.1.3.3.

2.1.3.2 Deletion and syllabification

An underlying low central vowel (/a/) optionally deletes under the circumstances described in the 'a' Deletion rule. This rule conspires with the 'y' Epenthesis rule and other operations to restrict vowel sequences across syllable boundaries.

'a' Deletion:

$$[\text{a}] \rightarrow [\text{a}] \sim \phi\ /\ \underline{\quad} \begin{bmatrix} +\ \text{mid} \\ +\ \text{fr} \\ +\ \text{stress} \end{bmatrix}$$

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

78(b). /rpa-eh -r/ [i̯ři̯'peg̯i̯Ř] *first*
one-ORD-3SM

The approximant [y] is deleted according to two y-deletion rules.

'y' Deletion I:

[y] → ∅ / _____ [+ palatoalveolar]

Example 30(b), repeated here as 79(a), and example 79(b) illustrate the first y-deletion rule. Example 79(c) illustrates the surface manifestation of the underlying 'y' which is deleted in other manifestations of the morpheme.

79(a). /hay jubt/ ['xa 'jubi̯t] *ironwood child's bow*

(b). /hayt/ ['xač] *ironwood tree*

(c). /hayet/ ['xayɛt] *It is an Ironwood tree.*

The second y-deletion rule is structurally similar to the first, but rule ordering differences indicate that they are distinct rules.[26] Both conspire along with other rules to satisfy a phonotactic constraint on yC sequences.

'y' Deletion II:

[y] → ∅ / _____ C

Example 80(b), which manifests a morpheme-final 'y' on the surface, is justification for the postulated underlying 'y' which is deleted in example (a).

80(a). /rahoy-m/ ['řag̯om] *posts*
post -3PL

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

The approximant y is phonetically syllabic according to the 'y' Syllabification rule.[27]

'y' Syllabification:

[y] → [+ syllabic] / [w] ____ V

This rule has been postulated to derive a surface form for completely abstract forms. The rule does not operate on morphemes which manifest the underlying 'y' in one of their alternate surface forms. The rule is independently motivated, however, as will be demonstrated. By this rule the copulative form of 'dog' is derived as in example 81.

81. /yawy-e -t/ ['yawi̯yɛt] *It is a dog.*
dog -COP-3SF

The Syllabification rule is a plausible phonotactic rule, but it is ultimately justified by establishing 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 Syllabification rule is operating on the same underlying form in example 81. This can, in fact, be done for the form in example 82.

82. /yawy-t/ [yawč] *dog*
dog -3SF

The surface form of the 3SF morpheme t in example 82 is derived by the independently motivated Palatal Assimilation rule (i.e. [+ alveolar] → [+ Palatal] / [+ Palatal] ____). Further evidence for an underlying yawy for *dog* is provided by the comparison of paradigms in examples 7, 8, and 9. 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 to derive yaw(y) from yawi. It is of course possible to maintain two phonologically unrelated allomorphs yaw(y) and yawi, but as long as a plausible phonetic relationship between them exists, it seems more natural to derive one from the other rather than to relate them simply as morphologically conditioned allomorphs.

The syllabification rule 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*:

83(a). ['yawi - ɛ - t][28] : ['ɸawi - ɛ - t]
It is a dog. *It is a river outlet*

(b). ['yaw - {š / č}] : ['ɸawi - t]
dog *river outlet*

(c). ['ya^{O} - m] : ['ɸawi - m]
dogs *river outlets*

2.1.3.3 Coalescence rules

Considerable phonetic modification occurs by the interaction of central vowels and the approximants w and y. This phenomenon is the basis of the more abstract three-vowel hypothesis which will be discussed as an alternative analysis in section 2.1.5.

High Front Coalescence:[29]

[ɨy] → [i] / _____ [+ segment]

By the interaction of this rule and the 'y' Deletion rule, the [ɨy] sequence never occurs on the surface in Alamblak. The only environment in which the sequence [ɨy] is not coalesced is in the case where the y deletes preceding a palatoalveolar consonant. The forms in example 84 will illustrate the validity of the underlying /ɨy/ sequence, however.

84(a). /mɨyt/ ['mɨ{š / č}] *tree*

(b). /mɨyet/ ['miɛt] *It is a tree.*

(c). /mɨym/ ['mim] *trees*

The High Front Coalescence rule results in phonemic overlap with /i/; compare forms of /mɨy/ *tree* (84) with those of /wi/ *lorikeet* (85).

85(a). /wit/ ['wit] *lorikeet*

(b). /wiet/ ['wiɛt] *It is a lorkeet.*

(c). /wim/ ['wim] *lorikeets*

Low Front Coalescence:

$$[ay] \rightarrow \begin{bmatrix} +\text{ mid} \\ +\text{ front} \end{bmatrix} \; / \; \underline{\qquad} \; \{^{C}_{\#\#}\}$$

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

86(a). /nunayt/ ['nunaʂ] *earthquake*

(b). /nunaym/ ['nunɛm] *earthquakes*

(c). /nunayet/ ['nunayɛt] *It is an earthquake.*

(d). /hingnay -ø/ ['xiŋgɨnɛ] *You worked.*
work.I.PST-2S

The Low Front Coalescence rule results in an underlying /ay/ phonemically overlapping with /e/. /ay/ and /e/ are phonetically identical in the following pair of words:

87(a). /gay -m/ ['gɛm] *white cockatoos*
white cockatoo-3PL

(b). /bɨk -e -m/ [bɨ'kɛm] *They are locusts.*
locust-COP-3PL

The mid vocoids [ə] and [ɛ̈] are the inputs for the next two rules.

Mid Front Coalescence:

$$\begin{bmatrix} +\text{ mid} \\ -\text{ front} \\ -\text{ round} \end{bmatrix} + [y] \rightarrow \begin{cases} [e] \; / \; \underline{\qquad} \; \begin{matrix} V \\ [-\text{ stress}] \end{matrix} \\ [i] \; / \; \text{elsewhere} \end{cases}$$

The Mid Front Coalescence rule specifies that [əy] or [ɛ̈y] fuses to a high front vocoid when manifesting the peak of a syllable (stressed or unstressed). Otherwise it becomes a mid front tense vocoid. The Mid Peripheral Diphthongisation rule (2.2.1) will further specify the mid vocoid in this environment as non-syllabic. Mid Front Coalescence is involved in the derivations of 88 and 89.

88. /hingnamëa/ *I worked* (remote past).
Step I ('y' Epenthesis): *[xiŋgɨ'namɛ̈ya]
Step II (Mid-Front Coalescence): *[xiŋgɨ'namea]

89. /hingnaya/[30] *I worked (today).*
Step I ('a' Dissimilation): *[xiŋgɨ'nəya]
Step II (Mid-Front Coalescence): [xiŋgɨ'nia]

Mid Back Coalescence:

$$\begin{bmatrix} +\text{ mid} \\ -\text{ front} \\ -\text{ round} \end{bmatrix} + [w] \rightarrow [u] \; / \; \underline{\qquad} \; V$$

This rule specifies that [əw] or [ɛ̈w] fuse to a high back rounded vocoid when preceding a vowel.

90. /na -was -noh-f/ *They (two) pierced each other to death.*
REC-*pierce-die*-2D
Step I ('a' Dissimilation): *[nəwas'noɡɨp]
Step II (Mid Back Coalescence): [nuas'noɡɨp]

Coalescence rules are not as clearly phonotactic processes as are epenthesis, deletion and syllabification. The High Front Coalescence rule and the first subrule of Low Front Coalescence conspire with other rules to restrict the yC sequence from surfacing. Thus ɨyC and ayC sequences become iC and eC. The second subrule of the Low Front Coalescence rule and the Mid Front Coalescence rule are not so obviously motivated. The former changes ay to e before pause. The latter creates vowel sequences across a syllable boundary only to have that boundary removed by a later diphthongisation process or block the sequence by y-epenthesis.

2.1.4 Rule ordering

It has been stated that certain phonological rules are unordered with respect to other phonological rules. This is true for processes of allophonic modification, epenthesis, syllabification and the Back Coalescence and 'a' Deletion rules. Other phonological rules must be ordered with respect to each other; that ordering is summarised here.

1. 'a' Dissimilation
2. Tense-Rounding Assimilation
3. Mid Front Coalescence
4. Palatal Assimilation
5. 'y' Deletion I
6. High Front Coalescence
7. Low Front Coalescence
8. 'y' Deletion II

The dissimilation process must apply first. Of the ordered coalescence rules (all of which are unordered with respect to each other), most apply late in derivations. The exception is the Mid Front Coalescence rule which precedes the Palatal Assimilation rule.[31] The orders in which rules apply in other combinations need not be specified. Dissimilation can only "feed"[32] Mid Front Coalescence and Palatal Assimilation can only feed 'y' Deletion I which, because of its structural description cannot bleed the Palatal Assimilation rule. The 'y' Deletion II rule applies only after other deletion and coalescence rules have applied. Some rules neither feed nor bleed other rules and thus need not be ordered with respect to each other. These ordering constraints are illustrated in Table 10.

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 ('a' Dissimilation): *[nəy'aym]
Step Ib (Mid Front Coalescence): *[ne'aym][33]
Step IIa (Mid Front Coalescence): *[ne'ɛm]
Step Ic ('e' Dissimilation): [ni'ɛm]

Table 10: Derivations

	/wa-hay-n-t/ IMPER-*give*-2S-3SF *Give to her.*	/wa-hay-n-a/ -1S *Give to me.*	/gay-m/ *white cockatoo*-3PL	/miy-t/ *tree*-3SF	/miy-m/ -3PL	/rahoy-m/ *post*	/yit-w-a-a/ *go*-IMPF-PRSUP-1S
'a' Dissimilation	*wə'gaynt	*wa'gəyna[1]	———	———	———	———	*yi'twəya[2]
Tense-Rounding Assimilation	———	———	———	———	———	———	yi'two̲ya
Mid Front Coalescence	———	wa'gina	———	———	———	———	———
Palatal Assimilation	*wə'gayñš	———	———	*miyš	———	———	———
'y' Deletion I	wə'gañš	———	———	miš	———	———	———
High Front Coalescence	———	———	———	———	mim	———	———
Low Front Coalescence	———	———	gɛm	———	———	———	———
'y' Deletion II	———	———	———	———	———	'ragom	———

[1]In this case the stem [a] dissimilates and the [a] imperative prefix does not. It is possible that a cyclical application of rules (applying to the stem in the first cycle) could be the explanation for the correct application of the 'a' Dissimilation rule here.

[2]'y' Epenthesis is an unordered rule. Since it applies whenever its structural description is met, it applies before 'a' Dissimilation in the derivation of this word. This must be the case since oa is an acceptable surface sequence not requiring 'y' Epenthesis (cf. example 95(c) in section 2.2.1).

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

92. Step I (Mid Front Coalescence): *[nay'ɛm]

For paradigms showing some of the phonetic variation in forms of /hay/ *give* and /nayay/ *come* the reader is referred to Appendix A.

2.1.5 An alternative analysis

As was mentioned in the last section, the present analysis postulates more than one origin for non-central vocoids. /i/, /e/, /o/ and /u/ are postulated as phonemes while some manifestations of [i], [e], [o] and [u] are derived from fusions of underlying sequences, and [o] sometimes derives from /ë/ or /a/ next to /w/. The High Front and Mid Front Coalescence rules for example are powerful enough to derive most surface high front vocoids ([i]) from underlying /ay/, /ëy/ and /ɨy/. By an extension of the present synchronic analysis a more abstract analysis could be proposed postulating only central vowels.

This 'three-central-vowel' hypothesis is not new for Sepik languages. Don laycock (1965), written in 1962, analysed the vowel systems of Abelam, Boiken, Iatmul, Manambu, Ngala, and Yelogu[34] as three-vowel systems. Soon thereafter Eunice Pike (1964) described Sepik languages as having a paucity of vowels with central vowels conditioned by palatalised and labialised 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 Marten (1973) postulated four vowels for Mayo (ɨ, ʌ, a, ɔ). Staalsen (1966) verified the three-vowel system for Iatmul (ɨ, 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 palatoalveolars. 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/, the Mid Front Coalescence rule has been motivated by independent concrete evidence which could account for occurrences of [i] in almost all environments. Gaps in the distribution of the approximant /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 test, however, and the number of alternate grammars which could be derived by allowing abstract forms in non-alternating morphemes seemingly could not be 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 /ɨy/. The Mid Front Coalescence specifies that [ɨy] cannot fuse to [i] in that environment. Forms like ['mɨtat] *death adder* and [bi'namɨt] *pandanus palm* are inexplicable with underlying forms like */mɨytat/, and */bɨynamt/. The sequence /ɨyt/ is regularly manifested as [ɨ{s̆ c̆}] as in /mɨyt/ ['mɨ{s̆ c̆}] *tree*. In such

cases an underlying /yɨ/ 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 reinterpretation of some underlying sequences as underlying /i/ has already taken place. The two paradigms of /hingnay/ *work* (Conj. II) in Tables 11 and 12 illustrate the forms of regular Conj. II roots in the Immediate past and present tenses. Reinterpretations have apparently occurred in the verb root in Tables 13 and 14.

Table 11: Immediate past tense paradigm (Conj. II)

		Singular	Dual	Plural
1		xiŋgɨ'ni-a	xiŋgɨ'na-ñɛ̈	xiŋgɨ'na-ñɛ̈m
2		_____ɛ-ø	_____ɛ-ƀɨn	_____e-kɛ̈
3	M	_____a-ř^{y}	_____ɛ-ƥ	_____ɛ-m
	F	_____a-š		

Table 12: Present tense paradigm (Conj. II)

		Singular	Dual	Plural
1		xiŋgɨ'ni-w-a	xiŋgɨ'ne-w-nɛ̈	xiŋgɨ'ne-w-nɛ̈m
2		_____e-w-n	_____e-^{o}-ƀɨn	_____e-^{o}-kɛ̈
3	M	_____e-w-ř	_____e-^{o}-ƥ	_____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 11 and 12 with the irregular paradigms in Tables 13 and 14. /pɨthay/ *talk*, an irregular verb of conj. II has the phonetic forms as shown in the two tables. The irregular forms are boxed in.

Table 13: Irregular immediate past tense paradigm

		Singular	Dual	Plural
1		pɨtɨ'ɠi-a	pɨtɨ'ɠi-nɛ̈	pɨtɨ'ɠi-nɛ̈m
2		_____i-ø	_____i-ƀin	_____i-kɛ̈
3	M	_____ɛ-ř^{y}		
	F	_____ɛ-š	_____ɛ-ƥ	_____ɛ-m

Table 14: Irregular present tense paradigm

	Singular	Dual	Plural
1	p̈ẗ̈'ɵi-w-a	p̈ẗ̈'ɵi-w-nɛ̈	p̈ẗ̈'ɵi-w-nɛ̈m
2	_____e-w-n	_____e-^{o}ɒ̈n	_____e-^{o}-kɛ̈
3 M	_____e-w-Řˇ		
F	_____e-w-t	_____e-^{o}-ɒ	_____e-^{o}-m

A comparison of the paradigms for hingnay and p̈thay reveals that the underlying form of the stem of p̈thay *talk* has been reinterpreted 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 reinterpreted forms.

In Table 13 /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 reinterpretations are 1) paradigmatic coherence (Kiparsky 1972:206-213), 2) the influence of the phonetic value on formulations of underlying forms (cf. Hale's discussion in Hale 1973), and 3) the regular rule change of the younger speakers whereby ay fuses into [ɛ] before palatoalveolars, the 'y' Deletion I rule being no longer operative.

The first and second person forms (p̈thi) 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 → *əy-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 reinterpreted as /i/, then the other first person and second person stems become /i/- final by analogy.

The fact that the /i̇y/ sequence is never manifested as such phonetically, but always as [i] or [i̇] plus [palatoalveolar] means that /i̇y/ 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 /p̈thay-a/ *I talked* to be reinterpreted (like the surface form) as /p̈thi-a/. The phonetic derivation from /ay/ to [i] is a complicated one and [i] is the manifestation of the highly abstract sequence /i̇y/ in many cases, which could exert an influence elsewhere for [i] to be interpreted as a phoneme.

In the third person singular forms on Table 13 [ɛ] has replaced the regular [a] (cf. Table 11). The palatoalveolar [Řʸ] and [š] have remained, however. The resultant forms may be described by removing the 'y' Deletion I rule from the phonology. With an underlying /p̈thayr/ the Palatal Assimilation rule produces [p̈ẗ̈'ɵay Řʸ] and the [ay] sequence remains intact to coalesce to [ɛ] according to the Low Front Coalescence rule.

A change like this in the third person forms simplifies the phonology by removing one rule and extending the application of another (more words satisfy the structural descriptions of the coalescence rules now that the y-deletion process does not operate on them first). This factor plus reinterpretations in the first and second person forms enhance 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 (1972:207ff) reports often happens. The verb must now be described with three allomorphs instead of two.[35] The final vowel of the allomorph [pɨtɨgi] 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 Alamblak.

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.145).

93(a). /tonay-ni-r/ [tona'ñɪŘ] *He ran and ran.*
run *-go*-3SM

(b). /hoay -et -r -n/ [xoa'yɛtɨřɨn] *He being asleep,*
sleep-POSSD-3SM-G.DEP

The remote past tense form of the stem (tone-më-r) correlates with the Low Front Coalescence where the ay has coalesced into [e]. The stem appears in unpredictable forms in other tenses, however, at least according to the phonological rules and conjugations established in this analysis. Consider the third person singular masculine forms of tone *run.*

remote past	to'ne-mɛ̈-Ř
near past	to'ne-řɛ̈-Ř
immediate past	to'ni-Ř
present	to'nit-wo-Ř
future	tone-'řag-ɨŘ

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

Immediate past, present and future forms are a problem also. 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/ [to'nemɛ̈]). A next plausible step would then be to reanalyse the remote past form as /tone/ to conform to the near past and then to diphthongise 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 Alamblak. Postulating underlying back vowels generates less discussion for or against the abstract analysis. On the one hand there is not as much evidence for processes of coalescence with central vowels and 'w'. For the most part the processes are assimilatory, whereby labials and approximant 'w' modify central vowels so that they surface as [ʊ], [o], and [ɔ] ('w' does not coalesce in these cases). On the other hand there is not an abundant evidence of back vowels, which having derived from central-vowel-'w' sequences, have been reinterpreted as underlying vowels.

According to typological evidence in the Middle Sepik area it is likely that back vowels have historically derived from central vowels possibly coalesced with 'w'. The modification of central vowels by 'w' producing back vowels in synchronic Alamblak phonology is suggestive of that possibility. There are some irregular verb alternations which suggest the same possibility. As with front vowels, however, whatever the historical development of the back vowels has been, it would appear that the present state requires underlying back vowels in the system.

Apart from the surface contrasts between central and back vowels as described in examples 49-54, let us examine the examples in 94.

94(a). /may-më -w -r/ ['memowR̆] *He was saying.*
say-R.PST-IMPF-3SM

(b). /may-më-r/ ['memɛ̈R̆] *He said.*

(c). /takyo-ø -r/ [tak'yoR̆] *He pushed.*
push -I.PST-3SM

(d). /kik -wë -r/ ['kikwoR̆] *He is painting.*
paint-IMPF-3SM

The [o] in example 94(a) derives from an underlying /ë/ according to the Tense-rounding Assimilation rule.[36] The [o] in example (c) could not derive from a coalescence of an underlying /ëw/ since underlying ëw sequences do not coalesce (cf. example (a)). Neither does the [o] in (c) derive from an underlying /wë/ since it would be manifested as [wo] as in example (d).

Takyo *push* is the only non-alternating o-final stem observed in a corpus of over 2,000 words. It is compared with alternating stems involving [o] (of which there are very few) in the following table. Although the variation among alternating forms of the verbs in that table possibly reflect derivations from abstract underlying forms, no pattern emerges for deriving back vowels from underlying sequences synchronically. The back vowels may have entered the system through borrowing or through reinterpretation of surface segments as underlying segments. As with the front vowels, they have now been established in the system as underlying segments.

Table 15: O — final verb stems and alternating stems involving [o] (3 person singular forms)					
Gloss	R.PST	N.PST	I.PST	PR	FUT
push	tak'yomëˇřˇ	tak'yořëˇřˇ	tak'yořˇ	tak'yowřˇ	takyo'řaɡɨřˇ
'direct benefactive suffix'	-nɨɡomëˇřˇ	-nɨɡořëˇřˇ	-nɨɡiřˇ	-nɨɡowřˇ	-nɨɡořaɡɨřˇ
mentally abberrant	mɨ'momëˇřˇ	mɨ'mořëˇřˇ	mɨ'miřˇ	mɨ'miwřˇ	mɨmo'raɡɨřˇ
diswant	'kuřmëˇřˇ	'kuřɨřëˇřˇ	'fokřɨřˇ	'kokřwořˇ	kuřɨ'řaɡɨřˇ

2.2 Phonotactics

2.2.1 Vowel sequences

The 'y' Epenthesis rule describes the insertion of an epenthetic [y] between disallowed vowel sequences. By that rule, underlying sequences of an unrounded vocoid plus a vocoid of identical articulation to, or lower articulation than, the first 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 the 'y' Epenthesis rule, (i.e. [uye] and [^{e}a]). Table 16 summarises the observed vowel sequences. The shaded area indicates sequences that are disallowed by 'y' Epenthesis.

Table 16: Two-vowel sequences

Preceding vowel \ Following vowel	i	e	ɨ	ë	a	u	o
i			–		–		
e	–		–	√	√	–	–
ɨ	–					–	
ë	–	√	–			–	–
a	√	√	–	–		–	–
u	√	uye	–	–	√		√
o	√	√	–	–	√	√	

A sample of vowel sequences are given in 95.

95(a). /barë -e -t/ [ˈbaɾ̈ɛ̈ɛt]
pillow-COP-3SF

(b). /nuat/ [ˈnuat] *fried sago*

(c). /kakthoant/ [kakt̪ˈɡoant] *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 phonetically non-syllabic as described by the three diphthongisation rules.

Mid Periph Diphthongisation:

$$\begin{bmatrix} +\text{ mid} \\ -\text{ central} \end{bmatrix} \rightarrow [-\text{ syllabic}] \; / \; \underline{\qquad} \; \underset{[-\text{ stress}]}{\text{V}}$$

This rule produces phonetic sequences such as [ᵉa], [ᵒi], [ᵒe] and [ᵒa], as illustrated in 96.

96(a). /teamt/ [tᵉˈam̪t] *coconut palm*

(b). /hoaymëa/ *I slept.*
Step I (Lo Fr Coales) *[xoemɛ̈a]
Step II (Mid Per Diphthong) *[xᵒˈemɛ̈a]
Step III ('y' Epenthesis) *[xᵒˈemɛ̈ya]
Step IV (Mid Fr Coales) *[xᵒˈemea]
Step V (Mid Per Diphthong) [xᵒˈemᵉa]

Mid Central Diphthongisation:

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

This rule produces phonetic sequences such as [ˈuᵊ] and [ˈeᵊ], as illustrated in 97.

97. /teahat/ *coconut*
Step I ('a' Dissim) *[ˈteəɡat]
Step II (Mid Cent. Diphthong) [ˈteᵊɡat]

High Front Diphthongisation:

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

This rule results in phonemic overlap with y. The 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.

98(a). /yi-më -r/ [yimɛ̈ɾ̆] *He went.*
go-R.PST-3SM

98(b). /wa -i -ø/ ['waⁱ] ∿ ['we] *Go!*
IMPER-*go*-2S

(c). /rim -i -ak -n -t/ [řimi'yakɨnt]
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. [dam'yagɨŘ] *teenage boy*.

Overlap with underlying /y/ occurs when, such as in 98(b), an underlying /ai/, which becomes phonetically [aⁱ], undergoes a process of coalescence according to the Low Front Coalescence rule. 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/ ['aⁱa] HORT-*go*-1S	/a-i-në/ ['aⁱñɛ̈]	/a-i-nem/ ['aⁱñɛ̈m]
2	/wa -i -ø/ ['waⁱ] IMPER-*go*-2S ∿ ['we]	/wa-i-fɨn/ ['waⁱɓɨn] ∿ ['weɓɨn]	/wa-i-kë/ ['waⁱkɛ̈] ∿ ['wekɛ̈]
3 M	/a-i-r/ ['aŘʏ]		
F	/a-i-t/ ['aⁱč]	/a-i-f/ ['aⁱᵽ]	/a-i-m/ ['aⁱm]

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 been deleted according to the 'y' Deletion I rule following the palatalisation of the PNG marker. In other forms the non-syllabic [ⁱ] has palatalised the following consonant without being deleted, i.e. 1D, 1PL, and 3F forms. Other cases fluctuate between coalesced and non-coalesced forms, e.g., the second person forms maintain the [aⁱ] configuration contrary to the Low-Front Coalescence rule in one form but coalesce the sequence to [e] in the alternate form. The 3D and 3PL forms completely resist coalescence of [aⁱ] and the first person singular form resists dissimilation. Most of these forms, therefore, actually contrast with an underlying /ay/ sequence because of their differential treatment by these phonological rules.[37]

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

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

2.2.2 Consonant sequences

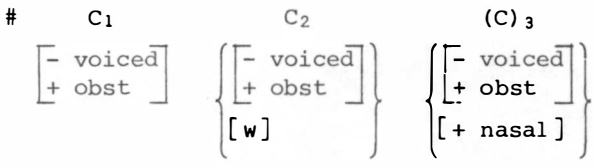
The consonant cluster (cc) rules presented in this section describe clusters which are allowed with no open transition[38] although an epenthetic [ɨ] may optionally separate the consonants of some of the clusters (cf. the

'ɨ' Epenthesis rule).

cc-rule 1:

Word initially a cluster comprising 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:



100(a). ['ɒkoɡɨřˇ] *bandicoot*

(b). ['třˇuɓɨkɨɓɛ̈t] *to scatter*

(c). [ɒřˇtɨka'ɓakɨkɨɓɛ̈t] *to place alongside*

(d). ['tkmakɨɓɛ̈t] *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 to five.

cc-rule 2:

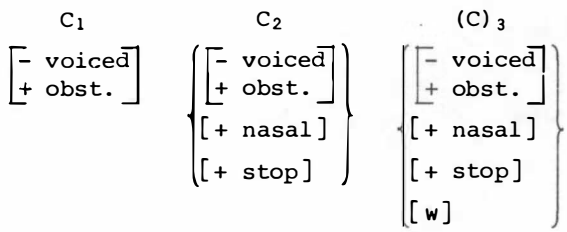
Any non-affricated or non-tapped consonant plus /w/ may cluster word medially.

101. ['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.

102(a). [ba{š/č}'mambɨt] *(croton plant variety)*

102(b). [yakd̥ib̥i'kab̥ik̥ib̥ɛ̈t] *to hold together*

(c). ['ř̆id̥tk̥ib̥ɛ̈t] *to flatulate*

One case of four consonants in a cluster has been recorded: [yaktk'bɛ̈tkʰk̥ib̥ɛt] *to get and mash up.*

cc-rule 4:

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

103(a). [dab'dug̥in] *(lineage name)*

(b). [xikab'mɛ̈ř̆a] *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:

C_1	C_2	$(C)_3$
[+ nasal]	{[+ nasal], [+ stop]}	{[+ nasal], [+ stop], [w]}

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

104(a). [t̥ig̥ɛ̈m'nak̥ib̥ɛ̈t] *to count*

(b). [wɪn'dɛ̈g̥it] *song*

(c). ['nuŋgwat] *bird*

cc-rule 6:

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

105(a). /morpam/ ['moř̆pam] *muddy water*

(b). /tekrit-/ ['te'kř̆it] *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.

C_1	C_2	$(C)_3$
[+ nasal, α artic]	{[+ nasal, α artic], [+ stop, α artic]}	[+ stop, α artic]

106(a). [ˈyɛ̈nt] *child*

(b). [waˈɡaññč] ∿ [waˈɡañ+ñč] *Take it.*

cc-rule 8:

A bilabial stop plus bilabial nasal may cluster word finally. The nasal manifests syllabic qualities.

107. /nefm/ [ˈnɛbm̩] *customs*

cc-rule 9:

A tap plus a non-peripheral oral stop may cluster word finally.

108. [ˈaɾ̌t] *this one*

The above statements of allowable consonant clusters are predictive of what appears 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 non-peripheral 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 a. on Table 18 and examples 106(b), 20(c) and 21(c)).

2.2.3 Syllable structure

The syllable is not easy to define in many cases for Alamblak. Some notion of syllable has been appealed to in certain areas, particularly in the stress rule (cf. section 2.3.1), 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 forms 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,
3. between two vocoids of equal and relatively long duration.

Table 17: Syllable types

Word position	Initial	Medial	Final
Syllable types			
c(c)(c)v(c)(c)			
cccv	'tkmakɨɓɛ̈t *to make a velar click*		
ccv	skuˈnɛ̈tɨkɨɓɛ̈t *to singe*		waˈšuxtwa *fall!*
cv	ˈwatit *hand drum*	ˈbakoɛt *It is a (shell).*	ˈkaˈdi *quiet!*
cccvc		yakˈtkbɛ̈tkɨkɨɓɛ̈t *to get and mash*	
ccvc	ˈkřæñjɪpam *white clay*		ˈnuŋgwařˇ *bird*
cvc	noxˈtiwant *I plant it.*	ˈmugɨřˇpam *crocodile meat*	ˈwatit *hand drum*
ccvcc			waˈgaⁱñšwant *take it*
cvcc	kuñč *house*		ˈkipɨřˇt *grass*
v(c)(c)			
v	awi *wait*		ɨndɨˈtio *that there*
vc	ařˇtiko *this there*	agiˈankɛ̈ *let me give you*	řˇɨpaɛt *it is one*
vcc	ˈařˇt *this (one)*		
cvv(c)			
cvv	ˈteᵊgat *coconut*		
cvvc			šɪɓaˈmoɛ̈t *delicious*

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:

4. A consonant plus approximant or tap form a complex onset of a syllable.
5. 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.gɨ.'nə·řɨgwa] (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 five 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.62) 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 Alamblak phonology.

There are three basic syllable patterns:

1) c(c)(c)v(c)(c)
2) v(c)(c)
30 cvv(c)

These basic patterns and their variations are illustrated in Table 17.

2.3 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 Kalam[39] 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 a similar phenomenon as a non-phonemic "linking schwa" in Abelam (Laycock 1965:44).

Margaret Landgon 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).

2.3.1 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 epenthetic [ɨ] between them in another word or words. Alamblak consonant phonotactics have been examined in 2.2.2 to identify clusters whose component contoids are allowable with no open transition. Examples demonstrating a contrastive /ɨ/ in analogous environments are presented in Table 18.

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. Secondarily, 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 18 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.

Having established the existence of a contrastive high central vowel /ɨ/, we shall now consider the nature of the vowel within the Alamblak vowel system. We will consider briefly two areas in which /ɨ/ differs from the other vowels, viz., stress placement and a-dissimilation.

First of all, the high central vowel /ɨ/ is distinct from the other vowels with respect to stress placement. Stress placement is determined by phonetic syllables (whether or not they are present in underlying forms).[40]

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 or series of two or more monosyllabic suffixes in the word is stressed.

Table 18

Close transition	vs.	/ɨ/
cc-rule 1.		
a. [tkɨ'bətkkɨɓɛ̈t] *to mash up*	a'.	[tɨ'ket] *It is a (kind of tree).*
b. [ƥto'toaet] *It is light-weight.*	b'.	['ƥɨtɨt] *vulva*
c. unattested tp	c'.	[tɨ'pit] *bone*
cc-rule 2.		
d. ['waš̲woř̲t] *He is spearing it.*	d'.	[mɛ̈sɨ'wɪř̲t] *garden*
cc-rule 3.		
e. ['bukɨtko] *to the headwaters*	e'.	['ƥitɨko] *where to?*
f. [kaknɨ'ɠɪřɨř̲t] *He restrained her.*	f'.	[dɨbi'tukɨnam] *They bumped (themselves).*
g. [ɪjoxtoney'etɨt] *she is sexually promiscuous*	g'.	['ƥɛ̈ɠɨtim] *pig lineage*
h. unattested tp	h'.	[kɛ̈mbɨ'řutɨpit] *policeman* (lit. *rodent bone*)
i. unattested krp	i'.	['kɪñɨkɨřɨpam] *black rain cloud*
cc-rule 4.		
j. [gɨřiɓ'nakᵘt] *(sago palm var.)*	j'.	[dɨbuɓɨ'naɠɨř̲t] *He shot it.*
cc-rule 5.		
k. [xemɛ̈'nɛ̈mkɛ̈] *We gave to you* (pl).	k'.	['doɠɨmɨkut] *canoe piece*
l. [yi'famɨmaf] ∿ [yi'fam:af] *parents*	l'.	[dukamɨ'miwa] *I don't recall.*
cc-rule 6.		
m. unattested n:	m'.	['ninɨn] *you* (Sg EMP)

A [ɨ] preceding a person-number-gender marker is counted as the peak of the last phonetic syllable of the stem to which the PNG marker is suffixed. Non-obligatory suffixes are not counted as part of the stem when stress placement is assigned.

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 rules are given in 109-111 below.

S Rule 1:

109(a). /bidan -m/ [bi'danɨm] *(shell type* (pl)*)*
shell.type-3PL

(b). /bidan-t/ ['bidant] *(shell type* (sg)*)*
-3SF

(c). /hay -më -t -fɨn/ [xe'mëtɨƀɨn] *She gave to you* (dl).
give-R.PST-3SF-2D

(d). /bidan-e -t/ ['bidanɛt] *It is a (shell type).*
-COP-

(e). /hingna-kɨfët/ [xiŋgɨ'nakɨƀët] *to work*
work -INF

S Rule 2:

110(a). /kɨpat/ [kɨ'pat] *sago frond stem*

(b). /kɨpɨm-e-t/ [kɨpɨ'mɛt] *It is a sago carrying basket.*
-COP-

S Rule 3:

111. /kɨpɨmt/ ['kɨpɨmɨt] *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 'a' Dissimilation rule. According to that rule all vocoids with the exception of [ɨ] will block its operation if they intervene between two syllables containing [a]'s (cf. p.40). The operation of 'a' Dissimilation is illustrated in 112 and 113. The basic form of the future irrealis suffix is /-rhwat/ as seen in example 112(a).

112(a). /hi -rhwat -fɨn-r/ [xɪřɨ'ɠwatɨƀɨnɨř][41]
give-FUT.IRR-2D -3SM
You (two) will (irrealis) *give to him.*

(b). /hi-rhwat-fɨn-a/ [xɪ'řɠwɔ̀tɨƀɨnà]
-1S
You (two) will (irrealis) *give to me.*

The [a] in the future tense morpheme in 112(b) is raised to [ə] by the dissimilation process caused by the following first person singular morpheme /-a/ (the [ə] is then backed and rounded by the [w]). 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, 113 below.

113(a). /hingna-ni-rah-r/ [xiŋgɨnaṉi'ř̆aɡɨř̆] *He will work (and) go.*
work *-go*-FUT-3SM

(b). /hingna-rah-r/ [xiŋgɨnə'ř̆aɡɨř̆] *He will work.*
-FUT-3SM

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

2.3.2 Epenthetic [ɨ]

As was mentioned earlier (cf. p.61) 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 114.

114(a). ['yɛ̈nɨř̆] *child*

(b). [kɨɓɛ̈'ɡatɛ̈] *having said*

(c). ['yɛ̈nɨř̆ ɨ kɨɓɛ̈'ɡatɛ̈] *The child having said...*

The high central vocoid [ɨ] after [yɛ̈nɨř̆] *child* is interpreted as epenthetic under these circumstances.

In section 2.2 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 formalise.

'ɨ' Epenthesis:

An epenthetic high central vocoid [ɨ] is inserted between all 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 'ɨ' Epenthesis will predict the occurrences of the epenthetic vocoid. The examples in 115 and 116 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 115 and 116 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.[42]

115(a). /ntakfët/ [nɨ'takɨɓɛ̈t] *to pulverise*

(b). /naku -nta -kfët/ [naku{$^{n't}_{nɨ't}$}akɨɓɛ̈t] *to sago-pulverise*
sago.palm-pulverise-INF

116(a). /tnda-kfët/ [tɨn'dakɨɓɛ̈t] *to weave*

(b). /kɨpa -tnda -t/ [kɨ'pa{$^{tn}_{tɨn}$}dat] *woven panel*
sago.frond.stem-weave-3SF

Note examples h' and j' in Table 18 which demonstrated phonemic /ɨ/ where the syllable boundary does not elide the vowel between allowable clusters tp and ɓn.

The conclusion was reached on p.62 that contrastive /ɨ/ never occurs noun-stem finally because [ɨ] 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 [ɨ] 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 /ɨ/ to occur stem finally in all nouns where it could be tested for). The pairs of nouns in Table 19 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 [ɨ] 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 115 and 116 where a syllable boundary between certain consonants provides a transition between them making a transitional vocoid unnecessary.

Table 19

Non-derived forms			Derived forms	
a.	'bɨkɨm	*locusts*	a'. bɨ'kɛm	*They are locusts.*
b.	'tikɨt	*platform*	b'. 'tikɛt	*It is a platform.*
c.	'yamɨt	*moon*	c'. 'yamɛt	*It is the moon.*
d.	'bařɛ̈t	*pillow*	d'. 'bařɛ̈ɛt	*It is a pillow.*

2.3.3 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.

117(a). [mɨnt] *(croton plant variety)*

(b). ['bɨkɨt] *locust*

(c). ['ɨřɨpɨt] *spoon*

(d). ['tɨŋgɨt] *mouth*

(e). ['dɨgɨnt] *wet*

(f). ['tɨmdɨt] *breast of a bird*

(g). ['tɨndɨgɨř] *(a type of ancestor spirit)*

(h). ['mɨmbɨřt] *palm sheath plate; boat*

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

118(a). ['kɨpɨmɨt] *basket tree*

(b). ['xɨřɨkɨt] *hook fish trap*

(c). ['nɨbɨtɨt] *(seed of wild flower variety)*

(d). ['ñɨgɨtɨt] *to weave, plait (a grass mat)*

We will conclude from the previous discussion that all stem-final [ɨ]'s are non-phonemic. If that is true, then the clusters in 117(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, likewise consonant cluster rules must be sensitive to phonetic syllables. For the purposes of determining allowable clusters, then, the ŋg and md sequences in 117(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 118 should be allowed to cluster without an epenthetic [ɨ] between them. They cannot, however; the [ɨ] is obligatory. The examples in 119 and 120, furthermore, illustrate that the same consonants as those under examination in 118 do occur as clusters without open transition in analogous environments (flanked by [ɨ]). 118(a) and (b) are repeated here for convenient comparison with 119 and 120.

118(a). ['kɨpɨmɨt] *basket tree*

119. ['pɛ̈řɨpmɨt] *(a kind of tree)*

118(b). ['xɨřɨkɨt] *hook fish trap*

120. ['yagɨřkɨmim] *enemies*

Since the cc-rules allow the middle two consonants in 118 to cluster medially and there are contrastive examples (119 and 120) where pm and rk do actually cluster without a transition vocoid, we conclude that the second [ɨ] in the

examples in 118-120 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 kɨpɨt *sago carrying basket* is not an allowable cluster finally. The suffix -ko 'allative' may be suffixed to the stem, however, to test the second [ɨ] since pk is a possible cluster at a syllable boundary. When this is done [kɨpko] *to the basket* results. Since the [ɨ] does not appear at the syllable boundary the second vocoid in kɨpɨt is interpreted as epenthetic. In this way the previous generalisation about all noun-stem final [ɨ]'s can be directly verified. In other examples, the [ɨ]'s in [nɨ'ta] *pulverise* and [tɨn'da] *weave* do not occur at a syllable boundary in morphologically complex constructions (cf. examples 115 and 116). Therefore they are interpreted as non-phonemic (i.e. /nta/ *pulverise*, /tnda/ *weave*).

['kɨřt] *peeling* is suspicious; even though kr is an allowable initial cluster, the intervening [ɨ] is the only vocoid in the word. To test it further the copulative suffix can be added which yields the form [kɨ'řɛt] *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 /ɨ/. The underlying form is therefore /kɨrt/ *peeling*.

Many [ɨ]'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 ['dɨgɨmɨř] *(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.

The postulate vowel-less words on the basis of predictability from formal rules could not in itself be 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 non-phonemic transition vocoids in Alamblak without a constraint of having a minimum of one phonemic vowel in each word, then vowel-less words would occur in Alamblak as well. Some of these would be composed entirely of stop phonemes e.g., /bkt/ ['bɨkɨt] *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.

2.3.4 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 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 approximants (or approximants and glottal stop as in the case of *Ndu* languages). Approximants modified central vowels producing front and back allophones. In some cases the central vowel and approximant coalesced 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 reinterpreted as the underlying form. In some cases morphemes with this new vowel served as a model for reinterpretations of other underlying forms. In this way non-central 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 reinterpreted 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.)

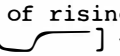
Sepik vowel systems are undergoing a general influence which may add to the tendency toward similar developments in many Sepik languages. The influence is that of New Guinea Pidgin which is spoken throughout the Sepik area. Its vowel system consists of primarily front and back vowels (i, e, u, o) as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

2.4 Intonation[43]

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 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 down-toning.

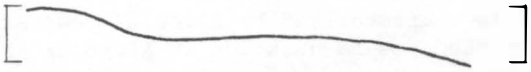
In accordance with Bolinger's findings, utterance-final statements, commands, and content (Wh) questions in Alamblak manifest the falling intonational pattern. This pattern manifests a gradually falling pitch to a low pitch on the final syllable.

121(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. Alamblak, by contrast, has such a downskip to a sustained level low pitch as the termination of the neutral yes-no question[44] or as a variant termination of the rising, subordinating intonation. As Bolinger predicts, though, the suspensive and yes-no question forms share a common intonational pattern. The neutral yes-no question skip to a low level pitch as in 122.

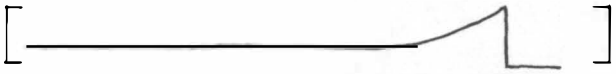
122.

ni dɨbha fukn
you morning did.you.bathe?

The sentence-medial or coordinate 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).

123.

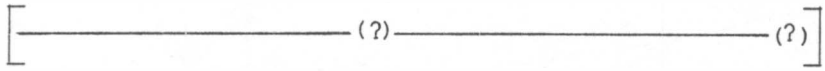
nanho yimatt nayaywt(h)
(If/when) my friend comes,

124. 

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 123 and 124.)

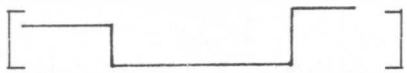
Another sentence-medial 'suspensive' pattern is a sustained level pitch also with an optional glottal closure. This pattern is common in a series or listing of items.

125. 

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 characterised by a medial downward obtrusion is characteristic of the marked yes-no question in Alamblak which implies incredulity on the part of the speaker.

126. 

ni dbha fukn
you morning bathed.you
You did not bathe this morning, did you?

PART THREE

GRAMMAR

3.1 Non-verbal word classes

3.1.0 Introduction

In this section 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 section 3.2 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 section so that the basic grammatical categories elaborated here will be referred to as roots rather than words.

3.1.1 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 summarised in Table 20.

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 section 3.3. 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 coordinate conjunction (cf. line three in Table 20).

Other subclassifications are possible. Adjectives and some verbs are similar in that they host the process derivational -tay (Table 20 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 section 3.2, however, words in all other classes must be inflected when occurring as a minimal exponent of a clause-level slot.

Table 20: Word classes

PNG markers	Particles	Words										
	-	+										
Elevationals		ADV	Nominal - Verbals									
Copula /-e/	-	-	+									
cf. 3.3 for verbal features	-	-	Non-verbal									Verbal
			-									+
Possessive Emphatic Clitic Mod. /-sk/ Coor. conj. S.Setting /-n/	-	-	+									-
			PRON	ADJ	Prop.N Kin.add.	Nominal						
Process der. /-tay/	-	-	-	(+)	-	(-)						(-)
Vocative /-ai/	-	-	-	-	+	-						-
Possessed /-et/	-	-	-	-	-	+						+
Non-possessed /-dohra/	-	-	-	-	-	+						+
						Noun INTERR	Kin.	QUANT Numeral	DEM	Time	Locative	
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.

3.1.2 Non-verbal word classes

3.1.2.1 Pronouns

Pronouns are distinguished as a class essentially negatively according to affixes they cannot host (cf. especially lines 4-6 in Table 20). There are two sets of pronouns: personal pronouns (Tables 21 and 22) and the emphatic/reflexive pronoun (cf. Table 23).

The traditionally unified paradigm of personal pronouns has been divided into two Tables 21 and 22. The reasons for making this distinction are discussed in section 3.2.4.2.

Table 21: Direct reference (personal) pronouns

	Singular	Dual	Plural
1	na(n)[45]	në(n)	nëm
2	ni(n)	nifin	nikë(m)

According to Table 20, pronouns host person-number-gender markers as do all nominal and verbal words. According to the discussion of pronoun phrase constructions, however, (section 3.2.4.2) the pronoun roots in Table 21 occur in isolation without person-number-gender markers. They do manifest the nucleus of the copulative construction, however, which then hosts the regular PNG suffixes.

Table 22: Indirect reference (3rd person) pronouns

Singular	Dual	Plural	Analysable allomorph
rër (M) rët (F)	rëf	rëm	rë

The allomorph rë occurs in the nucleus of a copular verb (cf. p.127). 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 23. The uninflected forms of the root are tuki (in simple, first-person-singular forms) and tu (elsewhere).

Table 23: Free-form emphatic/reflexive (E/R) pronouns

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

The allomorph tuki is manifested in first-person-singular forms only if no other base-level inflection (3.2.3.2.7) is manifested before the terminating suffixes. For example, tu occurs in example 127 with suffixes preceding the first-person-singular suffix.

127. tu -rap-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 128(a). Examples (b) and (c) illustrate reflexive constructions, first without and then with the E/R pronoun.

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

(b). yënr fufrmër
child cut.he
A child cut himself.

(c). yënr tur fufrmër
child E/R *cut.he*
A child cut himself.

3.1.2.2 Terms of address

Personal names and kin terms of address form a single class on the basis of inflectability with the vocative suffix.

129. daja -ai
father-VOC

130. Ginafmah -r
(Pr. name)-3SM

131. 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 non-possessed markers. In examples 132 and 133 the (a) forms are kin terms of address and the (b) forms are kinship terms.

132(a). daja -ai
father-VOC

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

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

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

3.1.2.3 Adjectives

A closed class of about forty-five adjectives is identifiable in Alamblak. 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 (non)-possessed markers -et/-dohra; basic adjectives do not host these markers.

For example, l34(a) is acceptable but (b) is unacceptable.

l34(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.[46] Most verbs and adjectives may be distinguished on this basis. There are cases of overlap, 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.

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 Alamblak react to the above two oppositions as complement (in a polarised 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 Alamblak 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 (1977b: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 Alamblak 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*).

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 p.77 (cf. the example in 134).

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.

135. sisfën -tay -w -r *He is panting.*
breathe-PROC-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.

136. bro-tay -w -r *He is getting big.*
big-PROC-IMPF-3SM
The correct translation of 136 is *He is getting big*, not *He is getting bigger.*

The crucial formal feature 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.

137(a). kisfu -tay -w -t
twilight-PROC-IMPF-3SF
It is becoming morning twilight (i.e., *dawn*).

(b). tahiy-ta -më -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 (1977b:31) eight semantic classes of adjectives into one formal class (Age-Human Propensity).

Table 24: Subclasses of adjectives

Adjective subclasses	-tay	Within noun phrase	
	Process derivation	Pre-Head	Post-Head
Value	X	X	X (preferred)
Physical property	X	X (preferred)	X
Dimension	X	X	X
Colour	X	X	(not observed)
Age-human propensity	---	X (preferred)	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 subcategorisation.

3.1.2.4 Nouns

The noun class is a subclass of the general class of possessable nominals (cf. Table 20). 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 3.2.3.1.1).

3.1.2.5 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 3.4.2.2), 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 25. 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.

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 3.3.3.2) as in tër *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*.

Table 25: Complex interrogative expressions

	fitëh *which*	fiñji *what* (act.)	tamëh *what* (subs.)	frëh *who*
Simple interrogative	fitëh yimar *which man?*	fiñji kfiwar *what did he say?*	tamëh hingnefm *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?* fitëh-ko *which*-AL *to where?*		tamëh-kor *what* -AD *where?*	frëhm-pnë *who* -REF/COM *with/to whom?*
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. 3.7.2.2 Purpose clause)	fitëh-kor yihatë *which*-AD *having.gone* *having gone where...?*	fiñji nay-t *what to.do* *to do what?*	temëh-(roh)-akt *what* -(GEN)-*to. get* *to get what?* tamëhm-pnë *what* -COM *why?*	frëh-roh yakt *who* -GEN *to.get* *to get whom?*
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?*

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.

138. 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.

139. fiñji kañjë hoaymër *How did he sleep?*

Thus any comparative meaning which fiñji might have had at one time seems to be absent now. The question in 138 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?*

3.1.2.6 Demonstrative

The demonstrative is a monosyllabic root ɨnd which is realised phonetically with open transition next to a consonant segment and commonly manifests a syllabic nasal, i.e. [ɨnd] ∿ [n̩d].

The demonstrative is distinguished from most other classes by its potential to host the proximity markers as suffixes. Only one verb, the existential verb të, and one bound locative word tëmbha *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 26: Demonstrative paradigm

	ɨnd DEM	-ar *near*	-ur *far*
3SM	ɨnd-r	ɨnd-ar-r	ɨnd-ur-r
3SF	ɨnd-t	ɨnd-ar-t	ɨnd-ur-t
3D	ɨnd-f	ɨnd-ar-f	ɨnd-ur-f
3PL	ɨnd-m	ɨnd-ar-m	ɨnd-ur-m

Synchronically there are fluctuating forms, as in example 140. At least two precipitating factors appear to have contributed to the elision of the demonstrative root ɨnd in example 140(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.

140(a). ɨnd-ar -m *these*
DEM-*near*-3PL

(b). ar -m *these*
DEM.*near*-3PL

The demonstrative combines with other formatives to form expressions which parallel the interrogatives of Table 25.

Table 27: Complex demonstrative expressions

	ɨnd 'demonstrative'
Simple demonstrative	ɨnd-ar -t *this* DEM-*near*-3SF
Time	ɨnd-ar yha -t *now* time
Location	ɨnd-ar-kor-t *this place* AD
Instrumental	ɨnd-ar-e *with this* INS
Comparative	ɨnd-ar-htet *like this*
Copulative	ɨnd-ar-e -t *It is this one.* COP
Reduplications	ɨnd-nd-m *those sorts*
Possession	nd-ar-r-ho -t *this one's* GEN

3.1.2.7 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 28.

Table 28: Minimal kinship term stem

Functions	+ Nucleus	+ 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:

$$\text{-em} \rightarrow \begin{cases} \text{-m} \;/\; \text{ë} ____ \\ \text{-em} \;/\; \text{elsewhere} \end{cases}$$

141(a). iñas -em -r *father's sister's grandson*
Fa.Si.Ch.So-KIN-3SM

(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 28. Kinship roots always occur with the classifier, except in composite forms (cf. section 3.2.3.2.6.1) such as the following:

142(a). yifa -mɨma -f *parents*
father-mother-3D

(b). najë -hfi -t *brothers/sisters*
old.sib.same.sex-KIN.group-3SF

Yimat *friend* in example 141(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.[47]

3.1.2.8 Locatives

The locative class is composed of bound roots and basic positionals. The minimal locative base is illustrated in Table 29.[48] Locatives are distinguished from other classes by distributional potential in noun phrase constructions (cf. section 3.4.2.2) and the set of affixes they host (cf. Table 20).

3.1.2.8.1 Bound locative roots

Table 29: Minimal locative base

Functions	+ Deictic	+ Nucleus
exponents	proximity markers a- *near* u- *far*	-kor 'adessive' -tembha *place*

L. Base
143. a -kor-t *here*
near-AD -3SF

The bound root -kor occurs more frequently as a case marker (cf. section 3.4.2.1) in relator-related phrases.

3.1.2.8.2 Basic free-form positionals

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

yurak	*up, above, up in*
n+ndë	*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 3.4.2) or the locative position of a locative phrase (cf. section 3.4.2.3) 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 3.4.2.1) which fills the nucleus position of a relator-related phrase. A positional word is illustrated in example 144(a) (boha) as the nucleus of the G. setting relator-related phrase, in example (b) (yurak) as the locative position in the locative phrase, and in example (c) (kimb) as the locative position in the locative-complex construction which in turn manifests the nucleus of a relator-related phrase.

144(a). G. Setting NP

warhon boha -nanë
be.seated middle-G.SET
Be seated in the middle

(b). LOC P

REF NP

tikt -pnë yurak wahegirtwant
platform-REF *up* *hang.it*
Hang it above the platform.

(c). Allative NP

Loc-complex Base

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 nucleus of a relator-related phrase without specifying the head noun.

Positions unique to animate beings:

ñiñga-tik	*front* (literally *face*)
eye -platform	
mong	*behind* (literally *back*)

Positions unique to houses:

bi	*front* (literally *pointed or protruding object*)
gur	*rear*

Positions unique to canoes:

rawof	*inside*
mëfha	*front* (literally *head*)
yifhi	*rear*
bufa	*side* (literally *plank*)

Position unique to trees:

yinhi	*under*

Position with large natural objects:

bumung	*behind*

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

145. 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 146.

146. doh -bufa -kor wahɨtitwa
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.

147. yima-këkragɨna-kor-n
man -rib.cage -AD -S.SET
on a man's rib cage
**at the man's side*

3.1.2.9 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 3.4.2). There is a similarity here with adverbs which 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 3.5.1.2).

3.1.2.9.1 Basic time words

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

Partitions of the day:

dbha	*morning*
krif	*afternoon*
yifung	*night*

General time reference:

yha	*day, time*
mar	*day* (literally *sun*)
href	*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 3.3.1.3.4).

Two of the time words of more general scope do not occur in the general setting phrase (cf. section 3.4.2.5), 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.

3.1.2.9.2 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 30: Minimal temporal phrase base

Functions	+ Nucleus	+ Specifier
exponents	mar *day*	kisfu *twilight*
		kisp *twilight*
	day-partition roots	mar *day*
		dañ *middle*

Readings: Collocations of the exponents of the nucleus and specifier functions are semantically restricted. The relative order of function slots may reverse in the case of mar-dañ ∿ dañ-mar *midday*.

148(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*

3.1.2.10 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 3.2.3.2.3).

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* (cf. section 3.2.3.2.3).

3.1.2.11 Adverbs

Modal adverbs form part of the modal structure of the clause. In that function they may occur as the nucleus 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 3.3.1.3.1). The nine observed modal adverbs are listed here by semantic categories.

1. *Frequency*

wompam	*again*

2. *Relative time*

dugo	*nearly, soon*
bi	*already*
yohre	*still*

3. *Speed*

fɨndi	*quickly*
bumbri	*quickly*
nhofjë	*slowly, carefully*

4. *Manner*

mëfrë	*vigorously*
masat	*very, much*
iñji	*thus*

A second class of adverbs could be termed scaler[49] adverbs. They are distinct from modal adverbs both morphologically and distributionally.

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 3.2.3.2.5).

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.

yinmot	*moderately* (of size only)
kashë	*moderately* (of size, only with *large*)
yinmayr	*very* (of size only with *large*)
masat	*very, much*

3.1.2.12 Particles

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

1. *Negation particles*

Negation particles manifest the negation function in negative clauses (cf. section 3.4.1.3).

fiñji	*not* (non-future)
afë	*not* (negative of uncertainty)
tafitë	*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).

2. *Negative*

The negative particle nhai[50] *no* is an interjection at the clause or sentence level and functions in the negation slot in the contrastive negation clause (cf. section 3.6.2.1.2) and occasionally in negative clauses as the negation particles do.

3. *Comparative particles*

Comparative particles either manifest the relator of a resemblance phrase (cf. 3.4.1.1.2) 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.

4. *Adjectival particle*

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

5. *Interjections*

There is a small subclass of particles termed interjections. 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.

$k^{\varsigma}k^{\varsigma}(k^{\varsigma})_{o}$ has a similar import to wayeye although it is used only as a serious sympathetic expression.[51]

$p^{\flat}$ *wow* is used as an expression of positive evaluation.[52]

orait *okay* is a New Guinea Pidgin loan word which has a discourse cohesion function of delineating a new section or paragraph.

3.2 Nominal constructions

In section 3.1 we discussed the non-verbal word classes of Alamblak. In this present section we will examine nominal expressions as they build up into complex constructions from stems to phrases.

3.2.1 Grammatical levels

The notion of a hierarchy of grammatical levels is basic to the tagmemic theory of language (cf. the discussion in section 1). 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:[53]

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

This section will describe three of the grammatical levels in Alamblak, 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.

In our discussion we will adopt Pike's (1967:438) defining features of words along with those discussed by Lyons (1968:202-204) and Mathews (1974:160ff).

Features of words include 1) isolability as minimal utterances no part of which is itself isolable, 2) permutability as units in a sentence, 3) rigidity of 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.[54] 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, isolability, 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).

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.

3.2.1.1 Phrase level

The noun phrase in Alamblak 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 nucleus (i.e. 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 149 will be analysed in terms of those features.

149(a).

Base	Terminator
ɨnd bro fëh-r	
DEM *big pig*-3SM	
the big pig	

The phrase in example 149(a) is phrase-like by features three and four. That is, 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 *pig big*-3SM	
the BIG pig	

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

149(c). Base Term

ɨnd yawy hɨtimë bro mif fëh-r
DEM *dog saw big truly pig*-3SM
the very big pig (which) a dog saw

The same phrase is word-like by feature one (the feature of isolability). Apart from non-inflectable particles and pronouns (cf. section 3.1), 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. ɨnd-r *that (one)*, yawy hɨtimë-r *the (one) a dog saw*, bro-r *big (one)*, mif-r *true (one)*, bro mif-r *truly big (one)*.

3.2.1.2 Phrase base level

The phrase base exhibits both phrase-like and stem-like features. It exhibits the same phrasal features as discussed for the phrase level in the previous section. In that 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 non-final constituents in the phrases in example 149 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 a derivational stem-forming process. For example, the noun phrase-base plus -et *possessed* or -dohra *non-possessed* forms a modifier base (cf. Table 42) which occurs as a constituent of another NP. For example, the base in example 149(a) may host the clitic as it does in example 150(a), which is then distributed as a modifier in example 150(b).

150(a). (Non) Possessed Modifier

NP Base Relator

ɨnd bro fëh-et[55]
DEM *big pig*-POSSD

(b). NP

NP Base Term

Modifier Nuc

NP Base

ɨnd bro fëh-et yima -r
DEM *big pig*-POSSD *person*-3SM
the man (who) has the big pig

The new (non)-possessed modifier base may in turn manifest the nucleus 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 151(a) which then manifests the head of the copular verb phrase as in example 151(b).

151(a). Copular VP Base
Modifier Base Cop
ɨnd bro fëh-et -e
DEM *big pig*-POSSD-COP

(b). COP VP Base
Modifier Base
NP Base
ɨnd bro fëh-et -e -r
DEM *big pig*-POSSD-COP-3SM
He (is the one who) has the big pig.

3.2.1.3 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 152.

152. N. Stem
N.Stem
fëh-en -pa
pig-dim-der.of
piglet meat

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.

The feature which has been discussed above is a traditional feature of stems. The stem level in Alamblak, 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 153 below.

153. fëh bro-pa -t
pig big-der.of-3SF
a big (piece.of) pig meat[56]

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.[57]

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 154 form an acceptable discourse where (b) is a headless NP in reference to pig meat in (a).

154(a). fëh-pa -m të-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.

3.2.1.4 Summary

The arguments for the contrastiveness of the three levels discussed here for Alamblak, stem, phrase-base and phrase are not conclusive. Since our criteria for making a judgment 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 phrase[58] (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. Alamblak 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.

3.2.2 Noun stems

The internal structure of a noun stem potentially includes a nucleus and a derivational or classifying suffix. The nucleus 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.

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 generalisations can be

abstracted from the dictionary in cases of derivational processes. Derived stem constructions are described in Table 31; it must be kept in mind that the table is not a generative formula.

Table 31: Derived noun stem construction

Functions	+ Nucleus	± Derivation
exponents	noun root	-pa 'derivative of'
		-ha *fruit of*
	Derived Noun Stem	-fa *money counting marker*
		-thëf *(male) resident of;*[1]
		-efkot *female resident of*
		-en 'diminutive'
		-ef *moderately sized*
		-mif *true*

[1] -thëf has the additional usage of indicating the occupier of a location other than a village or town without reference to sex.

Examples of roots plus derivational suffixes are given in example 155.

155(a). bu -pa *water*
rain-der.of

(b). gën -ha *banana*
banana.tree-*fruit*

(c). yawy-en *puppy*
dog -dim

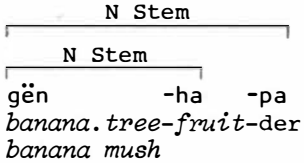
(d). Yamkopin-efkot *resident (female) of Amongabi*
Amongabi-resident

(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 31 a derived noun stem may recursively manifest the nucleus of another derived noun stem. This is possible only to a restricted degree, e.g.

156.


banana.tree-fruit-der.of
banana mush

Classified noun stems are composed of a root plus a classifier marker.[59]

Table 32: Classified noun stem construction		
Functions	+ Nucleus	+ Classifier
exponents	Noun root [+important tree]	-m
	Kinship term root	-em
	Foreign object root	-kfë

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*, wɨtën-m *breadfruit tree*, rku-m *two-leaf tree*, kɨp-m *basket tree*. Notable exceptions are unmarked terms for trees which derive from human beings in Alamblak 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, which host the -em classifier, see section 3.1.2.7.

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 3.1.2.7 and 3.2.3.2.1, respectively.

3.2.3 General noun phrase

The noun phrase is potentially composed of a nucleus plus a complex of phrasal enclitics as illustrated by Table 33. The nucleus is manifested by the base which will be described in section 3.2.3.2. The phrasal enclitics will be discussed in section 3.2.3.1.

Table 33: General noun phrase construction				
Functions	+ Nucleus	+ Terminator	± Emphatic	± Elevational
exponents	NP Base	Person-number-gender markers (v. Table 34)	-n 'emphatic'	Elevational enclitics (v. Table 35)

The configuration of terminator plus peripheral enclitics indicated in Table 33 is diagnostic of the general noun phrase versus relator-related (i.e. relator-axis) noun 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 section 3.4.

3.2.3.1 Phrasal enclitics

The enclitic markers on the general noun phrase include obligatory person-number-gender markers and the optional peripheral enclitics viz., the emphatic marker and elevational markers.

3.2.3.1.1 Person-number-gender markers

Person-number-gender (PNG) markers syntactically function to terminate the phrase; semantically they indicate the person, number, and gender of the head noun root of the phrase.

Table 34: Person-number-gender markers

	Singular	Dual	Plural
1	-a(n)[1]	-në(n)	-nëm
2	-ø(n)	-fɨn	-kë(m)
3 (M)	-r	-f	-m
(F)	-t		

[1]The final nasals in parentheses reduce preceding pause.

The similarity between pronouns and the person-number-gender markers may be seen by comparing Tables 34, 21 and 22. These suffixes are also manifested on the verb as actor and undergoer markers (cf. section 3.3.1.2).

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.

157. yɨma -m *people*
person-3PL

158(a). yɨma -kë *you people*
person-2PL

(b). yɨma -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 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:

Feminine		Masculine	
nëm-t	*female animal*	yiram-r	*male animal*
met-t	*female human, woman*	yindari̱y-r	*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. roots which refer to inanimate objects; 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 suffix indicates the drum is unusually slender, which implies it was made incorrectly and does not sound good. On the other hand, bari̱y-t *hornbill* with a feminine instead of the usual masculine suffix indicates, perhaps, that the feminine sex 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. Bi̱ndhor-t *cassowary* is also usually feminine but is the largest of the birds although typically quite stout. Mahu-r *(a kind of fruit-dove)* is masculine, but the most squat of doves.

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 159 not to indicate plural number, but to avoid specifying the unknown sex of the child.

159. yën -m heawrahtm ɨndom yamtn
child-3PL *she.will.bear.them another month.in*
She will bear a child in another month.

3.2.3.1.2 Emphatic marker

The emphatic clitic -n optionally follows the person-number-gender clitic.

160. fëh-m -n *pigs*
pig-3PL-EMP

3.2.3.1.3 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 3.3.1.2).

Table 35: Elevational markers	
-ko	*up*
-i(t)o	*on the level*
-he ∿ -we	*down*

161(a). fëh-m -ko *pigs up (there)*
pig-3PL-*up*

(b). fëh-m -n -ko *pigs up (there)*
pig-3PL-EMP-*up*

3.2.3.2 General noun phrase base

The general form of the Alamblak general noun phrase base (G. NP Base) is given in Table 36. 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 3.2.4.

Table 36: G. Noun phrase base

Functions	+(± Determiner$_1$	± Determiner$_2$	± Quantifier	± Outer modifier	± Inner modifier	± Nucleus)	± Clitic modifier	± Exhaustive quantifier	± Limiter
exponents	Demonstrative root	Pronoun of difference wom	Numerals (1-4)	General relative clause	Adjective phrase	Noun stem	-mku *portion of*	-buga *all*	-rpa *only (one)*
	Demonstrative stem		Ordinal numeral stem (Table 37)	Purpose relative clause	Interrogative root	Interr. root	-ñimbɨha *portion (length) of*		
			E/R pronoun root	(Non)-possessed modifier		Qual. nom. base	-sk *deteriorated*		
			Adjectival particle	Possessive phrase		Composite nom. base			
						Nominal clause			
						Kinship term stem			

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 others including enclitic slots) is extremely rare.

Permutability and co-occurrence restrictions will be mentioned in the discussion of each function slot.

3.2.3.2.1 Determiner$_1$ function of the noun phrase

The determiner$_1$ 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 determiner$_1$ 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 determiner$_1$ function (cf. Table 36).

Permutability:

The determiner$_1$ 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.

162(a). NP Base
ɨnd yima-r
DEM *man* -3SM
the man

(b). ? yima ɨnd-r
man DEM-3SM
the man

Exponents of determiner$_1$:

The demonstrative root is discussed in section 3.1.2.6. The demonstrative stem is described in Table 37 below.

Table 37: Demonstrative stem

Functions	(+ Nucleus	± 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.

163. DEM Stem
ɨnd - ɨnd yima - m *(some of) these sorts of men*

3.2.3.2.2 Determiner$_2$ function of the noun phrase

The determiner$_2$ is manifested by the pronoun of difference, wom, and may be glossed as *other, another, some, some other.*[60] 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 determiner$_2$ slot freely permutes to any prehead position. In forty occurrences in text, the determiner$_2$ slot never followed the nucleus slot. In elicitation, however, given certain contexts, it was permissible to permute determiner$_2$ slot to the subsequent position, e.g.

164. Nuc Det$_2$
yima wom -m *other men*
man other-3PL

Example 164 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-nuclear 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 36. Permutations may change the reference by changing the immediate constituency structure.

165. Out. Mod Det$_2$ Nuc Term
temb-t -ho wom ∅ -t *another (one) of a bow*
bow -3SF-GEN *another* ∅ -3SF

Example 165 occurs in a discourse where all of the fire-starting bamboo strips had been used up in trying to start a fire. Then another bamboo strip was tried, this time one from a bow (designated by the phrase in example 165). The order of elements in 165 avoids a possible ambiguity which would result from the unmarked order (Table 36). With the pronoun preceding the possessive phrase, it could be interpreted as a constituent of the possessive phrase, e.g.

166. Out. Mod: POSS. PH Nuc Term
wom temb -t - ho ∅ -t *another bow's (one)*

The structural description in example 166 would give a misleading meaning in the discourse. The phrase in 166 refers to a bamboo strip (unspecified in the nucleus) of another bow (implying that at least two bows were involved). The phrase in 165 does not refer to a different bow, but only to a different bamboo strip, which is taken from a bow.

3.2.3.2.3 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, ordinal number stem, emphatic/reflexive pronoun root (cf. 3.1.2.1) and adjectival particle (cf. 3.1.2.12).

Three numeral systems coexist 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.

3.2.3.2.3.1 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*)[61]
yima	*twenty* (literally *person*)

Numerals 'three' and 'four' are frozen constructions which transparently derive historically from a coordinate 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 numerals 'three' and 'four' are phonological words with one primary stress which falls on the conjunction morpheme. Morphologically they function as words also inasmuch as the internal PNG markers followed by the conjunction are syntactically fixed, unable to be separated from juxtaposed morphemes by expanding morphemes. As they are distributed within a coordinate NP they are treated as single words inasmuch as the numeral in first position receives the first-constituent conjunction (-i), not the second-constituent conjunction (-e) as it would if it were analysed as a phrase comprising two numeral constituents (cf. section 3.2.4.3 for a description of the coordinate NP).

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 coordinate 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. 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.

167. Quantifier Head Term

hos-f -i -rpa yima -t *three men*
two-3D-CONJ-*one* *person*-3SF

The phrase in example 167 is a very common way of talking about three male as well as three female persons.[62]

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', 'fifteen' and 'twenty'.

Table 38: Multiplier base
(Numerals for 5, 10, 15, 20)

Functions	+ Nucleus	+ Delimiter
exponents	tir *hand* yima *person*	yoht *whole* Numerals (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 130, in Appendix B.

When manifesting the quantifier function of an NP, the multiplier base is used to express numerals five, ten, fifteen and twenty. Numerals five, ten, and twenty are illustrated in example 168 below.

168(a). M. Base

tir yoht -t *five*
hand *whole*-3SF

(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.

3.2.3.2.3.2 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*
wɨrëh-r	*last*

Other ordinals ('second', 'third' and 'fourth') derive from cardinals by the suffixation of -yuk, (or -eh for 'third' and 'fourth').

Table 39: Ordinal numeral stem

Functions	+ Nucleus	+ Derivation
exponents	numeral roots (2-4)	-yuk -eh

Notes: -eh co-occurs only with numerals 'three' and 'four'.

169(a). hos-yuk-r *second*
two-DER-3SM

(b). hosfirpa-eh -r *third*
three -DER-3SM

Ordinal numbers above 'fourth' have not been observed unelicited.

Thus far we have discussed the first three function slots of the noun phrase — determiner$_1$, determiner$_2$, and quantifier — and their exponents. We turn now to the outer modifier.

3.2.3.2.4 Outer modifier function of the noun phrase

The outer modifier slot contrasts with the inner modifier slot on the basis of freedom of permutation within the noun phrase. The outer modifier has relatively greater permutability. With certain collocations of exponents of the inner modifier and head slot, the inner modifier can only occur

immediately preceding the nucleus (cf. section 3.2.3.2.5).

The functions of the two (outer and inner) modifier slots are the same. The modifier qualifies the exponent of the nucleus by providing additional identifying features of the nucleus.

Permutability

The outer modifier slot freely permutes to any position preceding the nucleus although it is only marginally acceptable preceding the determiner$_1$ slot. When the modifier occurs after the nucleus, it is commonly removed from the phrase and forms a head-less appositional phrase.

In example 170(a) the relative clause, manifesting the outer modifier, is in a post-head position within the noun phrase. In example (b) it is in an appositional phrase following the first noun phrase.

170(a).

Noun Phrase				
	Nuc	Out. Modifier		Term
ɨnd habhi	kmi	na	ɨnd kfë-më	-t
DEM	*small place*	*I*	DEM *say*-R.PST-3SF	
the small place (about) which I spoke				

(b).

Noun Phrase		Appositional Phrase			
		Out. Mod.		Nuc	Term
ɨnd habhi	kmi -t	na	ɨnd kfë -më	∅	-t
DEM	*small place*-3SF	*I*	DEM *speak*-R.PST	∅	-3SF
the small place, (the one about) which I spoke					

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 section 3.7.

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 non-finite predicates, 2) occur without actor and undergoer pronominal suffixes (cf. 3.3.1.2), 3) potentially incorporate nouns into the verb stem of the predicate (cf. 3.3.1.3), 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 section 3.4.

3.2.3.2.4.1 General relative clause

The first outer modifier to be discussed is the general relative clause which is described in Table 40. 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 relativisation strategies within the framework of the general relative Clause. Subjects, objects, and obliques are relativised on with a non-case-encoding strategy.[63] This strategy employs the general relative clause without manifesting the optional terminator plus relator complex (cf. Table 40). The head noun being relativised on[64] 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 relativisable (cf. the discussion of the comitative in section 3.4.2.3 which concludes that the comitative is a conjoined rather than a case-marked NP). Neither is the object of a comparative relativisable.

The strategy which employs the relative clause with the terminator plus relator is used to relativise 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 relativisation strategies are illustrated in examples 175 and 176. Before those examples are given, we will discuss the function slots of the general relative clause and their exponents in more detail.

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 objects[65] 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 171 illustrate nuclear NP's of the relative clause manifested both as NP's and as NP bases.

171(a). G. REL CL

met -t maroha-m haymë yima -r
woman-3SF *money* -3PL *gave* *person*-3SM
a man (who) gave money to a woman/a man (to whom) a woman gave money

(b). G. REL CL

met -t maroha-haymë yima -r
woman-3SF *money* -*gave* *person*-3SM
a man (who) gave money to a woman/a man (to whom) a woman gave money

Table 40: General relative clause								
Functions	± Peripheral functions	+/±(± Subject	± Inner object	± Outer) object	± Relativiser	+ Predicate	±(+ Terminator	+ Relator)
exponents	(v. clause peripheries in section 3.4)	NP NP NP base	NP NP base	NP NP base	DEM root	Verb base (with restrictions)	PNG marker (v. Table 34)	-ho 'genitive'

Note: 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.

171(c). G. REL CL

met -maroha-haymë yima-r
woman-money -gave man -3SM
a man (who) gave money to women

(d). G. REL CL

met -t hoitwa kuñ -t
woman-3SF *sleeps house*-3SF
a house (in which) a woman sleeps

(e). G. REL CL

met -hoitwa kuñ -t
woman-sleep house-3SF
a house (in which) women sleep

Word order tends to differentiate subject, inner object, and outer object NP's since they generally occur in the order given in Table 40. The order is not strict in relative clauses, however, as it is in certain other types of subordinate clauses (cf. 3.7.1).[66]

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.

Relativiser function of the general relative clause

The relativiser is optional. Its occurrence seems to be governed by pragmatic factors of hearer-based considerations on the part of the speaker. Thus, the relativiser 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 relativiser and those which do not. Thus the presence or absence of the relativiser does not seem to establish a contrastive relativisation strategy.

Relative clauses in examples 172 and 173 occur with and without the relativiser.

172. G. REL CL

ɨnd habhi kmi na ɨnd-kfëmë-t
DEM *small place I* DEM-*said* -3SF
the small place (about) which I spoke

173. G. REL CL

ɨnd kmi na kfëmë-t
DEM *place I said* -3SF
the place (about which) I spoke

The relativiser 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 relativiser cannot be terminated as a phrase, therefore example 174 with a terminated relativiser is unacceptable.

174. G. REL CL

*na ɨnd-r kfëmë-t
I DEM-3SM *said* -3SF

Most relative clauses are short, occur before the head noun (per Table 36), and do not exhibit the relativiser, as in example 175.

175. Out. Mod. Nuc 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 3.3.1.1.3). Only finite verbs can manifest the predicate function, thus the copulative verb base cannot occur as the predicate of a relative clause. Examples in 176 illustrate relative clauses with different predicate forms.

176(a). G. REL CL

kuk -w -a yima -m
bathe-IMPF-PRSUP *person*-3PL
men (who) are bathing

(b). G. REL CL

ni hik -r -fë yima -r
you follow-IRR-I.PST *person*-3SM
a man (who) would have followed you

(c). G. 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*

Like a subordinate clause in a sentence, a relative clause is semantically subordinate to the predication of the independent clause. Firstly the predicate of the relative clause is restricted in the information it conveys in that it does not host subject or object markers or switch reference markers. Secondly its subordination is indicated by the presence of the presupposition mood marker on the verb, cf. example 176(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 3.3.1.3.2).

There are restrictions on the degree of compactness allowed in a relative clause, however. As indicated in Table 40, 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 coreference 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 G. REL CL

A PNG marker and genitive suffix occur as clitics on the relative clause when relativising 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 177). The genitive marker indicates the function of the head noun within the relative clause.

Examples

Examples 177 and 178 illustrate relative clauses as they relativise on positions of the noun phrase accessibility hierarchy (cf. Keenan and Comrie 1977).[67]

177(a). G. REL CL
Subj/In.Obj In.Obj/Subj
ɨnd ø fëhr was -me yawy-t
DEM ø *pig* *pierce*-R.PST *dog* -3SF
the dog (who) bit a pig/the dog (whom) a pig bit

(b). G. REL CL
Subj
ɨnd ø tur fufr-më yima-r
DEM ø E/R *cut* -R.PST *man* -3SM
the man (who) cut himself

(c). G. REL CL
In.Obj./Subj
ɨnd ø nëm maroham hay -më mërho -r
DEM ø *we* *money* *give*-R.PST *European*-3SM
the European (to whom) we gave money/
the European (who) gave money (to) us

(d). G. REL CL
Subj
ø kaunsel tëh -më yima-r
ø *counsellor* *be.standing*-R.PST *man* -3SM
a man (who) was a counsellor

177(e). G. REL CL

Ins

ø na yawyr ɨnd-tat-më mɨy -t
ø *I dog* DEM-*hit*-R.PST *stick*-3SF
a stick (with) which I hit a dog

(f). G. REL CL

S.Set

ɨnd ø yimam gɨrha-më kuñ -t
DEM ø *men dance*-R.PST *house*-3SF
the house (in which) men danced

(g). G. REL CL

Subj (of comparative)

ø Pianr hafit yorh -w -a yën -m
ø *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 relativised 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 178(a).

178(a). G. REL CL

GEN

ø yimar kuñt hingna-më -r -ho met -t
ø *man house build* -R.PST-3SM-GEN *woman*-3SF
a woman whose man built a house

(b). G. REL CL

GEN

ø kuñt hingna-më yima-r -ho met -t
ø *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).

3.2.3.2.4.2 Purpose relative clause

The next exponent of the outer modifier function to be discussed is the purpose relative clause, which is displayed in Table 41. The purpose relative clause is similar to the general relative clause in many ways. The peripheral functions, the relativiser 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.

Table 41: Purpose relative clause

Func	± Periphery	± Subject	± In. Object	± Out. Obj	± Relativiser	+ Pred
exp	(v. clause peripheries in section 3.4)	NP	NP	Genitive NP / NP Base NP	DEM root	Purpose verb
		NP	NP / Genitive NP / NP Base	NP Base		
		Genitive NP / NP Base	—	—		

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 3.7.2.2), only the subordinating clitic is different.

The predicate function is manifested by a purpose verb, i.e., a verb stem (cf. section 3.3.1.3) 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 3.7.1. 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 genitivisation are illustrated in example 179 below:

179(a). PUR REL CL
Out. Obj
yinem-r yemrë-r-oh wikna-hay-yuk yima-r
child-3SM *meat* -3-GEN.PL *buy* -BEN-PUR *man* -3SM
a man to buy meat for a child

(b). PUR REL CL
In. Obj
yinem-r -ho yemrë-wikna-hay-yuk yima-r
child-3SM-GEN *meat* -*buy* -BEN-PUR *man* -3SM
a man to buy meat for a child

(c). PUR REL CL
In. Obj
nëm rmëntemb-t -ho wikna-yuk maroha-m
us *shotgun* -3SF-GEN *buy* -PUR *money* -3PL
money for us to buy a shotgun (with)

(d). PUR REL CL
Subj
nëm -oh marñingha -wikna-yuk maroha-m
we (pl)-GEN *wristwatch-buy* -PUR *money* -3PL
money for us to buy a wristwatch (with)

Examples

The examples in 180 illustrate purpose relative clauses as they relativise 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 relativisability of the genitive of a possessive phrase.

180(a). PUR REL CL
Subj
ø yifën -wikna-yuk masta -m
ø *carving-buy* -PUR *European*-3PL
Europeans (whose purpose is) to buy carvings

(b). PUR REL CL
In.Obj
ø nohta-yuk naku -t
ø *plant*-PUR *sago.palm*-3SF
sago palm for planting

180(c). PUR REL CL
Ins
∅ yifën -r-oh hingna-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

3.2.3.2.4.3 (Non)-possessed modifier

The next exponent of the outer modifier function to be discussed is the (non)-possessed modifier which is displayed in Table 42.

Table 42: (Non)-possessed modifier base

Functions	+ Nucleus	+ Relator
exponents	non-finite clause	-et 'possessed'
	expanded adjective phrase	-dohra 'non-possessed'
	NP base	

The terminating suffixes function differently depending on the exponent of the nucleus. When a clause or expanded adjective phrase manifests the nucleus, the construction characterises the head noun of the matrix noun phrase in terms of the adjective phrase (cf. example 186(d)), or in terms of the state or action of the predicate of the clause, e.g. 181(a). When a noun phrase base manifests the nucleus, the 'possessed' enclitic identifies the item which is possessed by the head noun and the 'non-possessed' enclitic represents its negation (e.g. 181(b)).

181(a). (Non)-possessed modifier
nur-et yën -r
cry-POSSD *child*-3SM
a child (who) cries

(b). (Non)-possessed 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 non-finite 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 relativises only on subject and object positions (cf. example 182), 3) the noun phrases within the (non)-possessed modifier have not been observed to be marked with the genitive.

182(a). (NON)-POSSD REL CL

Subj

ø fëh-(r) was -dohra yima-r
ø *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

ø yimam was -et fëh-r
ø *men* *pierce*-POSSD *pig*-3SM
a pig speared by men

(c). (NON)-POSSD REL CL

Out.Obj

ø yifemr yënr hay -et fëh-r
ø *father child give*-POSSD *pig*-3SM
a pig (which) {*father* / *a child*} *gave (to)* {*a child* / *father*}

3.2.3.2.4.4 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 43.

Table 43: 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 44: 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 43 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 in Table 44. 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 masculine	SINGULAR feminine	DUAL	PLURAL
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 34), 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 183.

183(a). POSS PH

yira-r -ho moh -t
fish-3SM-GEN *hole*-3SF
the fish's hole

183(b). POSS PH

yira-r-oh moh -t
fish-3-GEN.PL *hole*-3SF
the fishes' hole

From the distribution of the possessive allomorphs in Table 44, 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 43) can now be refined according to Table 45.

Table 45: Possessive phrase (revised)

Functions	+ Related Head	+ Possessive
exponents	NP	-oh 'genitive plural' -(h)o 'genitive'

The -(h)o 'genitive' morpheme must be further specified by a morphemic rule:

$$\text{-(h)o} \rightarrow \left\{ \begin{array}{ll} \text{-(h)o} \sim \text{-oh} & / \left\{ \begin{array}{l} 1S \\ 1D \\ 2S \end{array} \right\} \text{———} \\ \text{-(h)o} & / \text{ elsewhere} \end{array} \right\}$$

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.

3.2.3.2.5 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-nuclear position (per Table 36) especially with certain collocations. Collocations with certain exponents of the nucleus slot are restricted to the modifier + nucleus 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,

184(a). ɨnd bro dboryoh krta graf fëh -r
DEM *big good black wild pig* -3SM

(b). ɨnd dboryoh bro graf fëh krta -r
DEM *good big wild pig black*-3SM

(c). *ɨnd habhi fëh krta graf-r
DEM *small pig black wild*-3SM

Some collocations of two adjectives following the head noun have been observed.

185. ɨnd 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 3.1.2.3.

Adjective phrase

The adjective phrase is diagrammatically presented in Table 46.

Table 46: Adjective phrase

Functions	+ Nucleus	± Scaler[1]
exponents	adjective	Scaler adverb Comparative specific enclitic Diminutive specifier enclitic

Note: masat *very* precedes the adjective.

[1]The 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 the 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 Alamblak 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 Alamblak 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 perhaps 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 nucleus 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 186.

186(a).
```
   ┌--------┐
ADJ        PH
┌──┐      ┌──┐
tat  mɨy -mif -t
hard tree-very-3SF
very hard tree
```

(b).
```
   ┌---------┐
ADJ        PH
┌──┐      ┌──┐
tat  mɨy -ef        -t
hard tree-moderately-3SF
a moderately hard tree
```

(c).
```
   ADJ PH
┌──────────┐
dboryoh-mif  fëh-r
good   -very pig-3SM
very good pig
```

(d).
```
   (Non)-possd. mod.
┌──────────────────┐
  ADJ PH
┌──────────┐
dboryoh-ef        -et    doh  -t
good   -moderately-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 generalisations.

Repeatability

The scaler slot may be repeated within the adjective phrase, e.g.

187. 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 3.1.2.3. 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 188 below.

188(a). ADJ PH

habhi yinmot m+y-t
small moderate tree
moderately small tree

(b). ADJ PH

bro yinmot m+y-t
big moderate tree
moderately large tree

(c). ADJ PH

bro kashë m+y-t
big moderate tree
moderately big tree

(d). ADJ PH

*habhi kashë m+y-t
small moderate tree

(e). ADJ PH

bro yinmayr m+y-t
big very tree
huge tree

(f). ADJ PH

masat bro yima-r
very big man
very big man

The comparative and diminutive specifier enclitics are the same as those which occur manifesting a derived noun stem function slot (cf. Table 31). 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 186 illustrates the meanings of some of the suffixes when manifesting the scaler slot of the adjective phrase construction. The two functions of the diminutive clitic are contrasted in example 189 below. The functions of the comparative clitics may be contrasted by comparing their occurrences in adjective phrases (example 186) with their occurrences in noun stem constructions (cf. example 156). The suffix -en is glossed the same in both the noun stem and the adjective phrase: note the contrast, however, in example 189.

189(a). ADJ PH
habhi-en yawy-r
small-DIM *dog* -3SM
small small dog

(b). N Stem
yawy-en -r
dog -DIM-3SM
puppy

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 190.

190. In.Mod Head
fitëh yha -r
which *day* -3SM
when

3.2.3.2.6 Nucleus slot of the noun phrase

The next function slot to be discussed is the nucleus of the noun phrase. The function of exponents of the nucleus is to identify the basic class of entities or the entity being referred to by the phrase.

Permutability

Relative ordering of the nucleus slot within the noun phrase has now been effectively delineated by discussion concerning the relatively free permutability of the other noun phrase slots. The nucleus position always precedes enclitic slots as listed in Table 36. Otherwise the nucleus position may occur anywhere in the phrase, although it is rare to find the head noun preceding determiner$_1$.

Exponents of the nucleus

Common noun roots, noun stems, interrogative roots, qualifier nominal bases, composite nominal bases, and nominal clauses manifest the nucleus of the noun phrase. Noun stems have been discussed in section 3.2.2. Examples of interrogative roots manifesting the head of a noun phrase are given in 3.1.2.5. Compound forms have not been included as exponents of the nucleus; these will be discussed following the presentation of the various subtypes of the nominal bases.

3.2.3.2.6.1 Qualifier and composite (compound) 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 summarised in Tables 47 and 48.

Table 47: Qualifier nominal base

Functions	+ Modifier	+ Nucleus
exponents	noun root verb root	noun root

There are two semantic interpretations of the relationship between the modifier and the nucleus of the qualifier nominal base depending on the individual exponents of each function slot. Example 191 illustrates the first relationship, in which the first noun root identifies the substantive which is affected by the typical function of the second noun root.

191. 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 nucleus. Examples in 192 illustrate this relationship in which the exponent of the modifier function qualifies the generic head noun in terms of type or function.

192(a). mɨy tha -t
tree skin-3SF
bark

(b). hambray tha -t
clothe skin-3SF
clothing

Table 48: Composite nominal base

Functions	+ Nucleus$_1$	+ Nucleus$_2$
exponents	[{noun root / Proper Name Base} noun root]	[Composite root {noun root / verb root}]

There are three semantic interpretations of the relationship between the two nuclei of the composite nominal base depending upon the individual exponents of each function slot.

In the first relationship 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 193 illustrates this type of semantic relationship.

193(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 nuclei identify a member of a composite. Example 194 illustrates this type of composite.

194. yifa mɨma -f
father mother-3D
parents

The third type of relationship holds between a noun root and a verb root. The noun root of nucleus$_1$ identifies the source of the substantive and the verb root of nucleus$_2$ identifies the process involved in manufacturing it. Example 195 illustrates this type of construction.

195. kɨpa tnda -t
sago.stem.strip weave-3SF
woven wall panel

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 nucleus 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.[68]

3.2.3.2.6.2 Nominalised clauses

The final class of exponents of the nucleus position of the noun phrase is the nominalised clause. The structure of the nominalised clause is described in Table 49. As the head of a noun phrase, a nominal clause hosts regular noun phrase terminators indicating number in the third person.

Table 49: Nominalised clause

Functions	± Periphery	+/±(± Subj	± In.Obj	± Out.Obj)	+ Pred
exponents	(cf. clause periph. in 3.4.2)	[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]	[– / –]	

The predicate function of the nominalised clause

The exponents of the predicate function are nominalised verbs which are composed of a verb stem (cf. Table 69) plus the nominaliser suffix -nef. The predicate, then, is non-finite and lacks actor and undergoer pronominal suffixes.

Nuclear NP functions of the nominalised clause

The grammatical functions and semantic roles of the nuclear NP's in the nominalised clause are more difficult to identify than they are for other embedded clauses. Subjects of one-place predicates may be incorporated; subjects of multiplace predicates, however, cannot be incorporated and thus contrast with the inner and outer object under certain circumstances. Genitivisation in nominal clauses digresses from the general 'ergative' pattern of other embedded clauses (cf. 3.7.1) in that either the subject or the object of a two-place predicate may take the genitive form.

Examples 196(a) and (b) manifest the genitive form of the subject and example (c) has genitivised the inner object.

196(a).

Nominal CL
Subj

yifemr pëthawonmëanr nan-ho yi-nef-t
father talk.try.I.him I -GEN *go*-NOM-3SF
I tried talking to Father (about) my going.

196(b). Nominal CL
Subj
yifem-r pëthawonmëanr rër-ho yak-ni-nef-t na
father talk.try.I.him he -GEN *get-go*-NOM-3SF *me*
I tried talking to Father (about) his taking me.

(c). Nominal CL
In.Obj
akfërafëwahn yima -m bupa -r-oh yak-nef-t
do.not.talk.forbid.you person-3PL *water*-3-GEN.PL *get*-NOM-3SF
Don't forbid the men('s) getting of water.

A peripheral semantic role (typically manifested as an oblique NP) takes the genitive form as an inner object in example 197.

197. Nominal CL
In.Obj(Allative)
kfëyfifakrhwanr skur -r -ho yi-nef-t
talk.entice.will.I.him school-3SM-GEN *go*-NOM-3SF
I will entice him (about) going (to) school.

3.2.3.2.7 Post-nuclear functions of the noun phrase

Post-nuclear functions of the noun phrase include the modifier clitic, exhaustive quantifier, and limiter and they typically occur in that order. These functions are not always clearly differentiated functionally from derivational suffixes of the noun stem (cf. Table 31). In general, however, these phrase-level clitics function as adjuncts to the head noun which further specify or subclassify it rather than deriving a distinct lexical item in conjunction with it. Structurally there is greater flexibility in linear ordering and collocations with the post-nuclear functions than there is with derivational suffixes.

3.2.3.2.7.1 Clitic modifier function of the noun phrase

Repeatability 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 nucleus slot.

Exponents

The exponents of the clitic modifier function include, as listed in Table 36, -mku *portion of*, -ñimbɨha *portion (length) of*, and -sk *deteriorated*.

Example 198 illustrates a noun phrase with a clitic modifier.

198. kuñ -sk -t
house-deteriorated-3SF
deteriorated house

3.2.3.2.7.2 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.

199. kuñ -sk -buga-m
house-deteriorated-all -3PL
all of the deteriorated houses

3.2.3.2.7.3 Limiter function of the noun phrase

The limiter function is manifested by -rpa *only* (a secondary meaning of the numeral 'one'). The limiter may permute to most positions within the noun phrase although its position according to Table 36 is the most common. No variation of scope occurs with variations in linear ordering; phrases in example 200 have the same meaning although different stylistic effects may result.

200(a). bro-rpa kuñ -sk -m
big-only house-deteriorated-3PL
only big deteriorated houses

(b). bro kuñ -rpa -sk -m
big house-only-deteriorated-3PL
only big deteriorated houses

(c). bro kuñ -sk -rpa -m
big house-deteriorated-only-3PL
only big deteriorated houses

3.2.4 Miscellaneous phrase constructions and discussion

3.2.4.1 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 nucleus position, e.g.

201.

Nuc	Mod: proper n.	Term
kmi	Yamkopin	-t
village (Amongabi)		-3SF

Amongabi village

3.2.4.2 Constructions with pronouns

Constructions with pronouns deviate from the general noun phrase pattern in that the quantifier slot follows a pronominal nucleus.

An important observation about pronouns is that because of their distribution within a phrase, they appear to be unanalysable wholes.

Table 50: Pronoun phrase base				
Functions	± Determiner	+ Nucleus	± Quantifier	± Limiter
exponents	DEM	Pronoun base	Emphatic/ reflexive pronoun root	-rpa *only*

202(a). rët-rpa -t[69]
she-only-3SF
only she

(b). rët tu -t
she E/R-3SF
she herself

(c). rët tu -rpa -t
she E/R-*only*-3SF
she (and) only she herself

In example 202 the full pronoun form manifests the nucleus 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.

203. rët *she/her*

If the pronoun in 203 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, 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.

	PRONOUN		COPULATIVE FORM			
			Base	Copula	Terminator	
1.	na(n)	*I/me*	nan	- e	- a(n)	*(It) is I.*
	në(n)	*we two*	nën	- e	- në(n)	*(It) is we two.*
	nëm	*we*	nëm	- e	- nëm	*(It) is we.*
2.	ni(n)	*you*	nin	- e	- (n)	*(It) is you.*
	nifin	*you two*	nifin	- e	- fin	*(It) is you two.*
	nikë(m)	*you*	nikëm	- e	- kë(m)	*(It) is you.*
3.	rër	*he*	rë	- e	- r	*(It) is he.*
	rët	*she*	rë	- e	- t	*(It) is she.*
	rëf	*they two*	rë	- e	- f	*(It) is they two.*
	rëm	*they*	rë	- e	- m	*(It) is 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 reinterpreted 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 discuss the origin of person-number-gender markers in Alamblak in this work, however.

3.2.4.3 Coordinate and semicoordinate noun phrases

There are two types of coordinate noun phrases, conjoining and alternating. These are structurally described in Tables 51 and 52.

Table 51: Conjoining coordinate NP base

Functions	+ Nucleus$_1$	+ Link	± (+ Nucleus	+ Link)$_0$	+ Nucleus
exponents	NP PNP	-i 'CONJ'	NP PNP	-e 'CONJ'	NP PNP

The conjoining coordinate NP consists of two or more nuclear functions conjoined by linking devices which are obligatory on all but the final exponent. The typical linkages are the coordinate enclitics listed in Table 51. Alternatively they may be replaced by a pause juncture. The conjoining coordinate NP base functioning as a nuclear clausal constituent is optionally terminated with the -e 'conjunction' clitic. As a peripheral NP it manifests the nucleus of relator-axis phrases (cf. section 3.4.2).

204(a). yën -r -i yën -t -e mɨmem -t (-e)
child-3SM-CONJ *child*-3SF-CONJ *mother*-3SF (-CONJ)
a boy and a girl and mother

204(b). yën-r-i yën-t-e fëh-r fayk -f
pig-3SM *get.I.*PST-3D
A boy and a girl caught a pig.

The linking morphemes function to conjoin two or more phrases 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. Coordinate 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.

The coordinating conjunction contrasts in function with the conjunction of a comitative construction (cf. below).

Table 52: Comitative NP

Function	+ Related nucleus	+ Terminator	[±, +] Relator$_1$	[+, ±] Relator$_2$	± Elevational
exponents	NP base	PNG markers (v. Table 34)	-pnë 'comitative'	-rpat *together*	Elevational markers (v. Table 35)

The comitative marker is a multifactor morpheme functioning similarly to a conjunction here, encoding several semantic roles in its function as a case marker. The comitative NP will be contrasted with the referent NP in section 3.4.2.3 in which the -pnë formant functions as a case marker.

The formant -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 grammatical or pragmatic function. The comitative NP is clearly not an autonomous peripheral phrase. It is closely related syntagmatically as well as semantically to its associated NP.

205(a). COM NP
yën -r yën -t -pnë
child-3SM *child*-3SF-COM
a boy with a girl

(b). COM NP
yën-r yën-t-rpat
-together
a boy together with a girl

(c). COM NP
yën-r yën-t-pnë-rpat
-COM-*together*
a boy together with a girl

(d). COM NP
yën-r yën-t-pnë fëh-r fayk -f
pig-3SM *get.I.*PST-3D
A boy with a girl they two caught a pig.

The relationship between two NP's related by the comitative marker is semantically comparable to that between NP's linked by a coordinate conjunction. As we will see in section 3.5 in both cases the NP's are coreferenced on the verb as a composite unit functioning together in a single semantic role (e.g., as agents or patients, etc.), as in examples 204(b) and 205(d). According to other syntactic processes, however, these two constructions contrast in pragmatic or grammatical function. While the coordinate NP functions as a grammatical unit (e.g. as subject or object), the NP's related by the comitative do not function as equivalent participants. The full significance of the similarities and differences between the coordinate and comitative NP's is best discussed in the context of the clause unit, where they function (cf. section 3.5.2).

Table 53: Alternating coordinate NP

Functions	+ Nucleus$_1$	+ Link	±(+ Nucleus	+ Link)$_0$	+ Nucleus
Intonation					
exponents	NP	-(n)o *or*	NP	-(n)o *or*	NP

Note: The initial n of the conjunction is manifested following vowels and is deleted following consonants.

The internal intonational pattern of an alternating coordinate NP is the same as that which is manifested in sentences with subordinate clauses which are subordinated with the linking morpheme -(n)e (cf. 3.6.2).

206(a). yuanané -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 némem -r wita -mé -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 coordinate NP[70] functions to conjoin two or more NP's which are equivalent in grammatical and semantic roles. The conjunctions of both the conjoining and the alternating coordinate NP function in the same way. They contrast only in meaning.

3.3 Independent verbal constructions

3.3.0 Introduction

In section 3.2 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 Alamblak levels of stem, phrase-base, and phrase. Grammatical levels in Alamblak are characterised 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 verbal 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 nouns, adjectives, 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 section 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 serialised constructions will be discussed in section 3.3.1.3. Non-finite copular and existential verbs are discussed at the conclusion of this section. Other non-finite verbal forms are described in other sections of the grammar where they manifest predicated functions of dependent clauses (cf. sections 3.6 and 3.7).

3.3.1 Finite verb phrase

A finite verb phrase is composed of a base plus terminal and other pheripheral clitics as portrayed in Table 54.

Table 54: The finite verb phrase

Functions	+ Nucleus	± Actor terminator	± Undergoer terminator	± Elevation
exponents	VP base	(v. Table 65)	(v. Table 65)	(v. Table 35 cf. also p.151)

The components of a minimal VP base are discussed first, followed by a discussion of the peripheral clitics.

3.3.1.1 Minimal verb phrase base

The structure of a minimal VP base with tense, mode, aspects, and mood is portrayed in Table 55.

Table 55: Minimal VP base

Func.	+ $Mode_1$	$[^{-}_{+}]Tense_1$	+ Nucleus	+ Reality	$[^{+}_{-}]Tense_2$	+ Aspect	± Mood	± $Mode_2$
exp.	∅ 'DECL' wa- 'IMPER' a- 'HORT'	I. PST (v. Table 56)	one or more juxta-posed verb stems	∅ 'Realis' Irrealis marker (v. Table 58) -wah 'NEG. HORT'	TNS marker (v. Table 56)	∅ 'PERF' -wë 'IMPF'	-a 'PRSUP'	-t 'Irrealis'

Notes: $tense_1$ and $tense_2$ do not co-occur, but one of them must be manifested. Exponents of $tense_1$ occur in the $tense_2$ position when an irrealis marker manifests $mode_2$.

Example 207 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*.

207.
```
      VP
┌─────────┐
VP BASE
┌──────┐
yi-më   -r
go-R.PST-3SM
```
He went.

3.3.1.1.1 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 56: Tense and aspect

	Remote past	Near past	Immediate past	Present	Future
	-më	-rë	ø ∿ f- ∿ -fë ∿ -tawë	ø	-rhw ∿ -rah
Perfective ø	-më	-rë	ø ∿ f- ∿ -tawë ∿ -fë	ø	-rhw ∿ -rah
Imperfective -wë ∿ -w	-më-w	-rë-w	—	-wë ∿ -w	

Tense

The time references of Alamblak 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 3.3.1.1.5.

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. 3.6.2.1.2). 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.

208. yhof nërwit a -gur -kah -nëm-r -e {nayay-r -fë -r / nayay-r -rë -r}
yesterday slot.gong HORT-*beat*-PR.IRR-IPL-3SM-DEP {*come* -IRR-I.PST-3SM / *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 / ____ { 1S 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 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. 3.3.1.1.5). They do not form a coherent semantic class:

kahuk	*give*	kakrmit	*run away in fear*
wanuk	*hear*	funit	*swim*
kamuk	*say, think*	fɨknit	*enter*
hɨtit	*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. 3.3.1.1.3). 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 57.

Table 57: 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.

209(a). hoit -ø -r
sleep-PR.PERF-3SM
He sleeps. (= He is sleeping)

(b). hoit -wë -r
sleep-PR.IMPF-3SM
He is sleeping.

Imperfective

The imperfective marker -wë has two allomorphs which occur as follows:

$$\text{-wë} \rightarrow \begin{cases} \text{-w} \;/\; \ldots \begin{Bmatrix} \text{V} \\ \text{approx} \end{Bmatrix} \ldots \\ \text{-wë} \;/\; \text{elsewhere} \end{cases}$$

-w precedes or follows a vowel 'w' or 'y' and -wë occurs everywhere else.

Perfective and imperfective aspects clearly contrast in the remote past and near past tenses as illustrated in Table 56.

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 3.3.1.3.1.2). The precise interpretation of the imperfective is determined by contextual considerations. Thus, example 210 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.'

210. dbëna-më -w -m
sick -R.PST-IMPF-3PL
They were being sick.

3.3.1.1.2 Tense mode and reality

Three modes and two states of reality 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 3.3.1.1.3). 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 attitute toward what he says.

Realis and irrealis co-occur with the modes. Certain morphemes in this system are portmanteau forms combining meanings of tense and mode. The irrealis morphemes are suppletive in different tenses. Tense, mode and reality are discussed together so that the morphemes of all three systems can be seen in relation to each other.

Table 58: Tense and mode

Reality	Mode	Remote past (-më)	Near past (-rë)	Immediate past (ø ∿ f - ∿ -fë ∿ -tawë)	Present (ø)	Future (-rhw ∿ -rah)
Realis (ø)	Declarative (ø)	-më	-rë	ø ∿ f - ∿ -fë ∿ -tawë	ø	-rhw ∿ -rah
	Imperative (wa-)	--	--	--	wa-	--
	Hortative (a-)	--	--	--	a-	--
Irrealis (-r, -t and portmanteau morphemes)	Declarative (ø)	-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

Declarative and realis

Declarative and realis are morphologically unmarked. 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 211 illustrates an unmarked form of the verb yi *go*.

211. ∅ -yi-∅ -më -r[71]
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 state, 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.

Imperative and hortative realis verb forms are illustrated in example 212 below.

212(a). (ni) nuat wa -ya -n -t
(you) sago.patty IMPER-*eat*-2S-3SF
You eat the sago patty!

(b). (nëm) nuat a -ya -nëm-t
(we(pl)*) sago.patty* HORT-*eat*-1PL-3SF
Let us eat a sago patty!

(c). (rër) nuat a -ya -r -t
(he) sago.patty HORT-*eat*-3SM-3SF
He should eat the sago patty!

Irrealis

In contrast to the realis state which indicates the actuality of a state or event, irrealis 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 section 3.4 (negative clauses) and 3.6 (contrafactual and hypothetical clauses).

Declarative irrealis

Declarative irrealis forms of the verb occur obligatorily in negative clauses and in irrealis and negative irrealis clauses which manifest the apodosis of the contrafactual sentence (see section 3.6.2.1.2.5).

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 213 below.

213(a). fiñji noh-r -më -r
NEG *die*-IRR-R.PST-3SM
He did not die.

(b). fiñji noh-r-rë -r
-N.PST-

(c). fiñji noh-r-fë -r[72]
-I.PST-

(d). afë noh-rhwa-t -r
NEG *die*-FUT -IRR-3SM
He will not die.

Irrealis clauses (cf. section 3.6.2.1.2.5) exhibit declarative irrealis verb forms in the contrafactual sentences below. The negative irrealis verb manifests both the -r suffix before the tense marker and the -t suffix after it.

214(a). IRR CL
a -i -kah-n -n, hik -r -fë -an-n
HORT-*go*-IRR-2S-DEP *follow*-IRR-I.PST-1S-2S
Had you gone (and you should have), I would have followed you.

(b). (negative) Irrealis Clause
a -i -dohra -roh-kah-n -n afë hik -r -fë -t -an-n
HORT-*go*-NONPOSSD-*be* -IRR-2S-DEP NEG *follow*-IRR-I.PST-IRR-1S-2S
Had you not gone, I would not have followed you.

The irrealis present tense morphemes (declarative mode) are -kah and -wat (as in Table 58). -wat occurs 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.[73] These morphemes are illustrated in example 215 below.

215(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.

Imperative and hortative irrealis

Various combinations of the irrealis marker and imperative and hortative mode markers which co-occur with certain tense markers convey a particular conflation of component meanings including contrafactuality and/or hypotheticality 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 do not co-occur with past tenses.

216. yënr a -yakrmay -r -më -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 in present time conveys obligation (with the illocutionary force of a command) plus hypotheticality or contingency. The verb form exhibiting these forms manifests the protasis of a conditional sentence (cf. section 3.6.2.1.2.4). It occurs only with a second-person actor as in the first clause in example 217 below.

217. wa -i -kah-n -n kuñko wa -hoe -twa -ø
IMPER-*go*-IRR-2S-DEP *to.house* IMPER-*sleep*-FUT.IRR.IMP/HOR-2S
Go to the house (and) if/when (you do) sleep!

The combination of hortative and irrealis in present time in the second person form conveys the notions of obligation, contrafactuality, and hypotheticality. This combination cannot have the illocutionary force of a command. The meaning is more nearly equivalent to the subjunctive in English. The verb form exhibiting these modes manifests the protasis of contrafactual and contraexpectancy sentences (cf. section 3.6.2.1.2) as in the first clause in example 214(a), repeated here as example 218.

218. a -i -kah-n -n, hik -r -fë -an-n.
HORT-*go*-IRR-2S-DEP *follow*-IRR-I.PST-1S-2S
You should have gone (and) if you had, I would have followed you.

In non-second person forms the same combination of hortative and irrealis in present time conveys obligation plus hypotheticality or contingency with the illocutionary force of a command. The meaning is thus the same as for imperative irrealis second person forms in present time.

219. a -i -kah-r -n kuñko a -hoe -twa -r
HORT-*go*-IRR-3SM-DEP *to.house* HORT-*sleep*-FUT.IRR.IMP/HOR-3SM
Let him go to the house (and) if/when (he does) let him sleep.

Imperative and hortative irrealis in future time

The combination of imperative or hortative and irrealis in future time functions with the illocutionary force of a command. There is no semantic contrast between the imperative and hortative forms, morpho-syntactically they are in complementary distribution. The imperative occurs with second-person and the hortative with third-person actors.

There is a semantic contrast between imperative and hortative realis (present) verbs and imperative and hortative irrealis (future) verbs. In addition to the difference in time reference, the future imperative or hortative is the polite or diplomatic form. The present realis imperative or hortative is considered to be rude or harsh depending upon the relative social status of the illocutors and the social expectations of a given context in which it is used.

The polite future imperative and hortative verbs are illustrated in example 220 below.

220(a). (nikë) wa -roh-twa -kë
(you.PL) IMPER-*sit*-FUT.IRR.IMP/HOR-2PL
You all sit/be seated!

(b). (rër) a -roh-twa -r
(he) HORT-*sit*-FUT.IRR.IMP/HOR-3SM
May he be seated!

These forms may be compared with the present realis imperative and hortative forms in example 212.

Negative hortative

The final modal morpheme to be discussed (-wah) is not included in Table 58. It is listed as an exponent of the reality function in Table 55 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 221 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.

221(a). a -pɨtha-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 -pɨtha-ak -wah-r
HORT-ELEV-*talk* -INCHO-NEG-3SM
He should not start talking.

3.3.1.1.3 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 information[74] in a discourse. The label 'presupposition' indicates a semantic commonality amongst 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 3.4.1.2) and general relative clauses (cf. section 3.2.3.2.4) where it occurs obligatorily with imperfective forms of the verb, and general dependent and non-final subordinate clauses (cf. Table 108 and

109 in section 3.6), 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 which cannot manifest the marker, by contrast, it is precisely the truth value of the predicate which is being questioned or asserted, e.g.

222(a). Content Interrogative CL

frëhm dbëhnay-w -a -m
who sick -IMPF-PRSUP-3PL
Who is sick?

(b). Yes-No Interrogative CL/Declarative CL

yënm dbëhnay-w -m
children sick -IMPF-3PL
Are the children sick?/The children are sick.

Examples 222(a) and 223 (below) would be ungrammatical without the presupposition marker, and example 222(b) would be ungrammatical with it.

Relative clauses help to identify the referent of a noun phrase. As such they are semantically backgrounded vis-a-vis the main clause which makes the basic assertion of the utterance, e.g.

223. G. Rel Cl

ïnd dbëhnay-w -a yënm hoitwëm
DEM *sick* -IMPF-PRSUP *children they.are.sleeping*
The sick children are sleeping.

Similarly, the general dependent and non-final subordinate clauses which exhibit the presupposition marker are more clearly semantically backgrounded than those which do not. The general dependent clause in example 224(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.

224(a). G. Dep Cl

nëngorf ha -tonit-w -a -r -ne, kuñm hingnaywër
trucks CAUS-*run* -IMPF-PRSUP-3SM-DEP *houses he.builds*
He runs (two) trucks, (and) builds houses.

(b). Non-final Cl

marr tay -w -a -t -r, yikyi -wë -r
sun shine-IMPF-PRSUP-DA-3SM *perspire*-IMPF-3SM
Because the sun is shining (different actor) *he is perspiring.*

The non-final clause in example 224(b) is the implied cause of the independent clause.

The notion of presupposition or semantic backgrounding does not always seem appropriate for the morpheme -a. For example, -a occurs (obligatorily) with declarative irrealis imperfective forms and possibly as a part of the future morpheme in declarative irrealis forms.[75] These forms may occur as independent predicates as in example 225 below.

225(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.

3.3.1.1.4 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 3.4.1.4.

3.3.1.1.5 Minimal verb stem

The stem of the verb construction can be very complicated. The expansion potential of the stem will be discussed in section 3.3.1.3. In this section, minimal manifestations of the stem will be discussed including morphological classes of verbs, i.e. verb conjugations, and derived, i.e. adjectival and nominal, verb stems.

3.3.1.1.5.1 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 59. Verb roots may be classed according to whether or not variations occur on the initial consonant. Another classification is defined by diphthongisation 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.

Classificatory verbs form another verb class based upon their distribution and function in the equative clause. These are discussed along with the equative CL in section 3.4.1.1.2.

Table 59: Morphological variations defining verb conjugations

Types of variation	1 Immediate past tense variations (realis mood)	2 Consonant variations (verb root-initially)	3 Vowel variations (in final syllable of verb root)
Features of verb conjugations	A. ∅ B. f-	1. no variation 2. initial C → f/past tenses; k/present tenses; y/future tense	a. no variation b. V(C) → Vy(C)- /immediate past and present tense

Table 60 gives an example for five of the eight possible regular conjugations which have been observed.

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 suffix, (in the realis form). Semantically the immediate past is also differentiated from the other past tenses by one of its functions as a perfect aspect (cf. 3.3.1.1.1) which may in fact be the historically prior function of the immediate past tense marker.

There are recurring patterns among the irregular verbs which suggest several residual conjugations.

Irregular conjugation I

Irregular conjugation I is characterised by feature c plus certain irregularities.

Feature c: V(C)- → Vy(C)-/ remote past tense, near past tense and future tense.

The pattern of feature c is complementary with respect to feature b. Feature b diphthongises in immediate past and present tenses and feature c diphthongises in all tenses except immediate past and present. In both patterns the immediate past and 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 61.

Table 60: Verb conjugations and example paradigms[1] (3SM forms)

Regular conjugations	Features (v. Table 59)	Gloss	Remote past	Near past	Immediate past	Present	Future
I	A.1.a.	*drink*	fut-më-r	fut-rë-r	fut-r	fut-wë-r	fut-rah-r
II	A.1.b.	*wash*	kipta-më-r	kipta-rë-r	kiptay-r	kiptay-w-r	kipta-rah-r
III	A.2.a.	*fell*	foh-më-r	foh-rë-r	foh-r	koh-wë-r	yoh-rah-r
IV	A.2.b.	*get*	fak-më-r	fak-rë-r	fayk-r	kayk-wë-r	yak-rah-r
V	B.1.a.	*hit*	tat-më-r	tat-rë-r	f-tat-r	tat-wë-r	tat-rah-r

[1]It can be noted from this table 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.

Table 61: Irregular conjugation I verbs (3SM forms)					
	R.PST	N.PST	I.PST	PR	FUT
hear	wayn-më-r ['wañmɛ̈ř]	wayn-rë-r ['wañrɛ̈ř]	wanu-r ['wanuř]	wanuk-wë-r [wa'nukwoř]	wayn-rah-r [wañ'řaɡɨř]
say	may-më-r ['memɛ̈ř]	may-rë-r ['mařʏɛ̈ř]	famu-r ['ɸamuř]	kamuk-wë-r [ka'mukwoř]	mi-rah-r [mi'řaɡɨř]
give	hay-më-r ['xemɛ̈ř]	hay-rë-r ['xařʏɛ̈ř]	fahu-r [ɸaɡuř]	kahuk-wë-r [ka'ɡokwoř]	hi-rah-r [xi'řaɡɨř]

Other features of this class include the additions to the stem of -u in the immediate past and -uk in the present tense following metathesis in the CV roots.

Irregular conjugation II

Irregular conjugation II is characterised by feature d.

Feature d: V- → { Vy/ immediate past; it/ present tense; i/ future tense }

Verbs in this conjugation include the following:[76]

hoe	*sleep*
tone	*run*
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 [punɛš] ∿ funi-t[77] (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 62, 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 non-finite constructions or non-final position in a verb serialisation construction.

Table 62: Miscellaneous irregular verbs

	R.PST	N.PST	I.PST	PR	FUT
see	hɨti-më-r	hɨti-rë-r	hɨti-tawë-r	hɨtit-wë-r	hɨti-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	r-i-ë-r	yifi-r	kit-wë-r	(yi)riah-r
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

3.3.1.1.5.2 Adjectival and nominal verb stems

Derived process verb stems are formed by suffixing -tay (a conjugation II verb stem form, cf. Tables 58 and 59) to certain adjectives and noun roots.

Table 63: Derived process verb stems

Functions	+ Nucleus	+ Derivation
exponents	adjective root	-tay
	noun root [+ Process]	

Adjectival verbs

Most adjective roots may function as derived process verbs (cf. the relevant discussion on adjectives in section 3.1.2.3). Example 136 in section 3.1 is repeated here as example 226.

226. bro-tay -w -r
big-PROC-IMPF-3SM
He is getting big.

Nominal verbs

A few noun roots may manifest the nucleus slot of the derived process verb stem. These roots are specified by the feature [+ process] in Table 63. cf. examples in 227.

227(a). kisfu -tay -wë -t
twilight-PROC-IMPF-3SF
It is becoming morning twilight (dawn).

(b). tahɨy-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 3.3.1.3.1 concerning serial verb constructions.

3.3.1.2 Peripheral and terminal inflections

The peripheral inflectional categories viz. actor/undergoer, elevational and inchoative affixes, are integrated with the minimal VP base (Table 55) in the expanded Table 64. Subordinating inflections are discussed in section 3.6. The nuclear slot will not be expanded until section 3.3.1.3.

3.3.1.2.1 Pronominal person markers

Verbal pronominal markers indicate the actor and undergoer[78] 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 third-person-singular, gender of the actor and undergoer. They are listed in Table 65.

Table 64: Expanded VP base with peripheral inflections

Functions	$Mode_1$	$Elevational_1$	$Tense_1$ Head	Inchoative	Reality $Tense_2$ Aspect Mood $Mode_2$	Actor	Undergoer	$Elevational_2$
exponents		Elevational prefixes (v. Table 68)		-ak 'inchoative'		person markers (v. Table 65)	person markers (v. Table 65)	Elevational suffixes (v. Table 35)

Table 65: Pronominal person markers				
		Singular	Dual	Plural
1		-a(n)*	-në(n)	-nëm
2		-ø(n)	-fɨn	-kë(m)
3	M	-r	-f	-m
	F	-t		

*The morphophonemic rules governing the manifestation of person markers is the same as with NP terminators. The final nasals which are in parentheses reduce word-finally unless, in the case of second-person-singular, it follows a consonant.

The actor and undergoer person markers are illustrated by the two paradigms in Tables 66 and 67.

Table 66: kit (*go*.present.perfective)				
		Singular	Dual	Plural
1		kit-a	kit-në	kit-nëm
2		kit-n*	kit-fɨn	kit-kë
3	M	kit-r	kit-f	kit-m
	F	kit-t		

*The second singular form in the imperfective is kit-wë-ø

Table 67: tat-wë (*hit*-imperfective)			
	Singular	Dual	Plural
Act – Und			
1 – 3 [M F]	tat-w-an-[r t]	tat-wë-nën-f	tat-wë-nëm-m
2 – 1	tat-wë-n-a	tat-wë-fɨn-në	tat-wë-këm-nëm
3 [M F] – 2	tat-wë-[r t]-n	tat-wë-f-fɨn	tat-wë-m-kë

3.3.1.2.2 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.[79]

Table 68: Elevational prefixes[1]

	Level	Sloping up		Sloping down	Straight down
Toward speaker	yari(m)-[2]	yua-	më-	mi-, yhë(m)-	wa-
Away from speaker	ri(m)-	u-			

[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 64).
The prefixes indicating 'sloping up' form complementary sets. Certain verbs require the distinction between toward and away from the speaker and others do not when hosting prefixes for 'sloping up'.

[2]Final nasals elide preceding heterorganic consonants.

Elevational prefixes are illustrated in example 228 below.

228(a). yarim-ak -r -t
ELEV -*get*-3SM-3SF
He got it (toward the speaker).

(b). u -hɨtit-wë -r -m
ELEV-*see* -IMPF-3SM-3PL
He is looking up at them (away from the speaker).

(c). më -dbëhnay-r
ELEV-*sick* -3SM
He was sick (upward). (= *Having gone up, he became sick.*)

(d). mi -brñi -r
ELEV-*move.away*-3SM
He went down.

(e). yhëm-h+tit-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.

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,[80] 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. 3.2.3.1).

Examples in 229 illustrate the elevational suffixes.

229(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.I.PST-3SM-ELEV
He went down there.

Elevational prefixes may co-occur with elevational suffixes as illustrated in example 230.

230(a). wa -mi -tëh -n -we
IMPER-ELEV-*stand*-2S-ELEV
Stand down, down there!

(b). yua -muh -wë -r -we
ELEV-*climb*-IMPF-3SM-ELEV
He is climbing up down there.

3.3.1.2.3 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 stylised 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 231 illustrate the use of the inchoative suffix.

231(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)!

3.3.1.3 Expanded verb stem: serial constructions

In this section we will examine the structure of complex verb stems. Structurally the complex verb stem is a serialisation of roots (verb, noun, adjective, time word and adverb). Serialised 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.[81] Others are phrase-like constructions with head plus modifying constituents.

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), other 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 serialised 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.[82]

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 serialised (e.g., generic and non-specific noun roots are most commonly 'incorporated'). Sapir (1911:265), in his defence of the notion of noun incorporation in Amerindian languages, associated noun incorporation with verb compounding by characterising 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'.

All of the serialised constructions discussed in this section are described formally as verb stem constructions. The verb stem display is presented in Table 69.

3.3.1.3.1 Serial verb root constructions

Since there is no non-arbitrary way to structurally distinguish derivational constructions from non-derivational serial ones, this section will be organised essentially on a semantic basis. Derived forms which result in a valency change on the verb will be discussed first. Derived and serial forms which add aspectual components to the verb will be discussed next followed by a discussion of compounding and reduplication. Finally, serial constructions which resemble predicates of so-called 'merged clauses', the least cohesive serial type, will be described. Section 3.3.1.3.1.6 will summarise the constraints on all of these constructions.

The semantic and structural similarities between all of these serial constructions suggests that derived and compound stems originated from 'merged clause' serial forms. This hypothesis will form part of the explanation for the unusual constraints on causative and benefactive processes as discussed in the section on transitivity (3.5.2.2). The contrasts between idiomatic compounds, pure compounds and merged serial constructions will be summarised in section 3.3.1.3.1.6 along with certain constraints common to all of these structures which distinguish them from dependent and independent clause constructions.

3.3.1.3.1.1 Derivational processes: causative, benefactive, and reciprocal

The first expansion of the verb stem to be discussed is the derivational level. The three morphological derivations which change the valency of the verb, causative, benefactive and reciprocal are discussed in this section.

Causative and benefactive constructions will be discussed together due to certain formal and semantic similarities between the two types, although the morphological 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. It will also demonstrate the structural continuum that exists from morphological derivations to phrasal series of roots.

Causatives

The causative formants are listed in Table 69. Two of them are derived from verb roots (hay *give* and yak *get*) and one of them doubles as a benefactive marker (-hay). Both of these roots occur in serial constructions with their

Table 69: Verb stem construction

Functions	± Derivation	+ Nucleus	± Asp_1	± Asp_2	± Asp_3	± Asp_4	± Derivation
	Causative	one or more juxtaposed v. roots	Adverbial roots	Spatial aspect roots	Auxiliary roots	Temporal aspect roots	*Benefactive* (-hay) (-nho)
exponents	(hay- *give*)	v. stem		v. roots		v. roots	
	(yak- *get*)	n. root adj. root					
	(ha-)	Time word root					
	(ka-)						
	Reciprocal						
	(na-)						

Notes: The noun root, adjective root, and time word root manifest the nucleus function without the potential of hosting derivational or aspectual slots. A noun root occurs initially (cf. section 3.3.1.3.2) and an adjective root or time word root occurs non-initially in a sequence of juxtaposed stems (cf. sections 3.3.1.3.3 and 3.3.1.3.4). The $aspect_1$ slot may be repeated and an imperfective-like temporal aspect root ($aspect_4$) may be followed by the cessative temporal aspect in a repetition of the $aspect_4$ slot or vice-versa. The $aspect_3$ slot may permute to any posthead 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 $aspect_3$ and/or $aspect_4$ 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 237. Other constraints on serial constructions are discussed in section 3.3.1.3.1.6).

basic lexical meanings intact. As serial roots they bear either a causative or benefactive relationship with another root or merely a temporal relationship to another root (cf. section 3.3.1.3.1.5).

Table 70 outlines the types of causative constructions and the semantic implications of each type. The table is organised to demonstrate the progression from synthetic to analytic structures.

Table 70: Causatives

Causative types — **Description, definition, examples**

I. *SYNTHETIC CAUSATIVES*
(Derived stems)

1. *Direct physical causative (DP.CAUS):*

Der.	Nucleus
ka-	case frame 1 and 4 verb roots[1]

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.

a. ka -fkne -më -r -m
DP.CAUS-*enter*-R.PST-3SM-3PL
He caused them to enter (something) by physically taking them.

2. *Direct event causative (DE.CAUS):*

Der.	Nucleus
ha-	case frame 1 and 4 verb roots

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.

b. ha -fkne -më -r -m
DE.CAUS-*enter*-R.PST-3SM-3PL
He caused them to enter (something) by entering with them.

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.

c. mi -yohɨta-t ha -suh -më -t -r
tree-branch-3SF DE.CAUS-*fall*-R.PST-3SF-3SM
The tree branch caused him to fall by falling with him (i.e., *by breaking as he stood on it*).

[1] cf. 3.5.1.2.1 for a description of case frames of verbs.

Table 70 cont. ...

An example involving the causer in an action which includes only a feature of the action of the causee is provided in example d. 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 -më -r -m
person-3SM DE.CAUS-*ascend*-R.PST-3SM-3PL
A man lifted them up.

3. *Direct causative (D.CAUS):*

Der.	Nucleus
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-më -t -a
(tree var.)-*skin*-3SF D.CAUS-*hot* -R.PST-3SF-1S
The yarmu *bark blanket made me hot.*

f. hɨnu -t doh -t hay -ni[1]-më -t -t
high.water-3SF *canoe*-3SF D.CAUS-*go* -R.PST-3SF-3SF
The high water took (away) a canoe.

II. *ANALYTIC CAUSATIVES*
(Serial verbs)

1. *Indirect causative (I.CAUS):*

Nucleus	
case frame 1,2,3,4 and 5 verb roots	case frame 1,2,3,4, and
and hay- *give*	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.

g. yima -r hay -noh -më -r -a
person-3SM *give-unconscious*-R.PST-3SM-1S
A man gave me (something) (causing) me (to become) unconscious.

h. wifër-t fɨr -gënngɨ-më -t -a
wind -3SF *blow-cold* -R.PST-3SF-1S
The wind blew (on) me (causing) me (to be) cold.

[1]Word-medially the verb root i *go* sometimes exhibits the allomorph ni.

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 70, 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 interpreted strictly 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 70.

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 71.

Table 71: 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 Alamblak data generally support the schema in Table 71. 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 predicatable relationship. The Alamblak 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 characterised 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 Alamblak 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 Alamblak.[83]

Benefactives

The two benefactive formatives (cf. Table 69) 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 nuclear 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 (hay *give* prefixed as a causative and suffixed as a benefactive) and similar semantic features characterise 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.[84]

Direct benefactive

The direct benefactive is defined by five factors:

(1) ***Same time***, i.e. the event and the effect happen at the same time;

(2) ***Same place***, i.e. the benefactor (actor) and beneficiary are in close physical proximity;

(3) ***Same happening***, i.e. both the benefactor and beneficiary experience the same state or event;

(4) ***Intentional***, i.e. the benefactor acts intentionally;

(5) ***Good effect***, i.e. the benefactor intends the event to have a good effect on the beneficiary.

The direct benefactive is illustrated in 232 below.

232(a). suh -nho -më -r -r
fall-D.BEN-R.PST-3SM-3SM
He fell purposely with him for his benefit.

(b). kuñt hingna-nho -më -m -r
house work -D.BEN-R.PST-3PL-3SM
They helped him build a house.

Indirect benefactive

The indirect benefactive is defined by only one factor:

(1) ***Effect***, i.e. something happens to the actor or he does something which has a good or bad effect on the beneficiary (depending on the meaning of the nuclear verb root or the wider context in the case of verbs which are neutral with respect to the effect on the beneficiary).

The indirect benefactive is much less restrictive than the direct benefactive.

With respect to ***time***, the initial event and its subsequent effect need not be experienced at the same time although that would commonly be the case.

With respect to ***place***, the benefactor and beneficiary need not be in close physical proximity.

With respect to the same ***happening***, the benefactor and beneficiary do not necessarily experience the same state or event.

With respect to the ***intentionality*** of the benefactor, he does not necessarily act intentionally.

The ***effect*** on the beneficiary may be good or bad. The notion of good effect, or benefit can be made more explicit. In all cases of good effect the beneficiary is affected positively either physically or psychologically or both. 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.

The indirect benefactive is illustrated in 233 below. Suh *fall* in (a) implies a good effect; noh *die* in (b) implies a bad effect; and tu *throw* in (c) is neutral with respect to its effect.

233(a). suh -hay -më -r -r
fall-I.BEN-R.PST-3SM-3SM
He fell with a good effect on him (e.g. *to his delight*).

233(b). noh-hay -më -r -m
die-I.BEN-R.PST-3SM-3PL
He died with a bad effect on them (e.g. *to their sorrow*).

(c). këfrat tu -hay -më -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 the pig was wounded or killed.)

Reciprocal

The reciprocal prefix na- is a de-transitivising prefix. It occurs with basic or derived transitive verbs with only one non-singular (actor) participant marked on the verb.

Examples in 234 illustrate the reciprocal form of basic transitive verbs.

234(a). maruham na -hay -më -f
money REC-*give*-R.PST-3D
They (two) gave money to each other.

(b). na -h+ti-më -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 69), 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 235 illustrate the reciprocal in a serial construction and in a derived reciprocal-causative verb.

235(a). Stem$_1$ Stem$_2$
yën -f m+yt 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.

3.3.1.3.1.2 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 69).

The thirty-one aspectual roots are classified below with general definitions. Examples in 236 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.

Adverbial aspects (Aspect$_1$)

Emotive

bëbra	*desiderative*
difrën	*anxiously*

Speed

dimandi	*quickly*
yow	*slowly*

Value

foray	*empty, of no consequence*
beb	*badly*
nheh	*feignedly*

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*
t+t+b+t+t	*half-heartedly*
yahiyah	*noisily*

Spatial aspects (Aspect$_2$)

habri	*encircling*
hëhri	*around*
hëtfas	*from place to place*
nëhta	*evenly distributed*
tirna	*off the mark*
thoni	*all over* (literally: *drift*)

Auxiliary aspects (Aspect$_3$)

won	*attemptative*
tita	*unsuccessful attemptative*
wonfëh	*competence*

Temporal aspects (aspects$_4$)

hakru	'habituative' (HAB)
hani	'continuous toward a goal' (CONT.to)
hasë	'continuous in a state' (CONT.at)
yifah+ta	'durative' (DUR)
kotha	'durative with comprehensive action'
ni	'progressive' (possibly a serialised form of yi *go*)
tani	'completive' (CPL)
tay	'process'
t+mbhë	'cessative' (literally: *cut*)

(With adverbial aspect):

236(a). yënr nur-nheh -më -r
child cry-feignedly-R.PST-3SM
A child cried feignedly.

(With spatial aspect):

(b). yenr nur-hëtfas -më -r
child cry-from place to place-R.PST-3SM
A child cried from place to place.

(With temporal aspect):

(c). yënr nur-hasë -më -r
child cry-CONT.at-R.PST-3SM
A child cried for some time.

(With auxiliary aspect):

(d). yënr muh -tita -më -r -t
child climb-unsuccessful-R.PST-3SM-3SF
A child tried but failed to climb it.

(Expanded form):

(e). Asp$_1$ Asp$_2$ Asp$_4$
yënr nur-nheh -hëtfas -hasë -me -r
child cry-feignedly-from place to place-CONT.at-R.PST-3SM
A child continually cried feignedly from place to place.

Examples in 237 illustrate more complicated constructions; in some cases patterns of embedding require constituent analysis within the verb stem.

(With repeated aspect$_1$):

237(a). Verb stem
pɨtha-rhti -yahiyah-fora -më -r
talk -trick-noisily-empty-R.PST-3SM
He talked trickingly and noisily with no point.

(With juxtaposed roots):

(b). Verb stem
Nucleus Asp
tandhi-ak -ni-difrën -më -t -m
cook -get-go-anxiously-R.PST-3SF-3PL
She cooked, got them (and) went anxiously.

(With repeated aspect$_4$):

(c). Verb stem
Asp$_4$ Asp$_4$
mar dañr hingna tɨmbhë hakrut-wë -nëm
sun middle work cessative HAB -IMPF-1PL
We habitually stop working at midday.

(With embedded stem):

237(d). Verb stem
Der. Nucleus
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 aspect$_3$):

(e). Nucleus Asp$_3$
Verb stem
Nuc Asp$_4$
hingna-tɨmbhë -tita -më -m
work -cessative-*unsuccessful*-R.PST-3PL
They tried unsuccessfully to stop working.

3.3.1.3.1.3 Compounding

The approach to compounds taken here is similar to the discussion of 'compound' nouns (section 3.2.3.2.6.1). 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 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 238(a).

238(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). hohra-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 239 can be a paraphrase of example 238(b), but no such paraphrase is available for example 238(a).

239. hohra-t yak-hatë, yirona -më -t
thorn-3SF *get*-SA *feel.pain*-R.PST-3SF
Having gotten (a hold of) the thorn (same actor), *she felt pain.*

In the case of example 238(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 238(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 240:

240. këfra-e fëhr tu -fɨnah -më -an-r
spear-INS *pig* *throw-arrive*-R.PST-1S-3SM
I shot the pig with a spear.

The compound verb in example 240 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 (fɨnah *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.

241. këfra-t tu -më -t -an-t fɨnah -më -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 241 does not imply that the spear pierced the pig as that of example 240 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 238(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*.

3.3.1.3.1.4 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 extended predication with non-stative verbs and a continuative 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. Non-onomatopoeic, non-stative roots which are typically reduplicated are illustrated in example 242.

242(a). bur -bur -na-hanit -wë -r -m
drop-drop-do-CONT.to-IMPF-3SM-3PL
He is dropping them along the way.

Reduplicated stative roots signify an extended continuous aspect, e.g.

(b). 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.

(c). hingna-marña -ba -marña -më -r
work -straight-LIG-*straight*-R.PST-3SM
He worked very well.

3.3.1.3.1.5 Sequences of roots as predicates of merged clauses

Serialised constructions of verb root plus verb root which are semantico-syntactically less constrained than derived or compound stems can be likened to 'merged clauses'. The relationship between verb roots in these constructions resembles a productive syntactic relationship more than the morphological relations of verb roots in derived and compound forms.

The semantic relationships that obtain between these serialised roots include temporal relationships (simultaneity and sequentiality) 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.[85]

243. grha -nur-më -m
dance-cry-R.PST-3PL
They danced {*while they*, *and then,*} *cried.*

The events expressed by the verb roots in example 243 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 244 below.

244(a). yimar këmbrur muh -hambrë -më -r -r mɨs -n
man possum climb-search.for-R.PST-3SM-3SM *tree*-S.SET
A man climbed a tree {*and searched*, *searching*} *for a possum.*

(b). hoe -toweh-më -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 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 245.[86]

245(a). wifërt fɨr -gënngɨ-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 (with a hitting action).

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 3.3.1.3.1.2), the head-modifier constructions are discussed separately to highlight some of the structural differences and to emphasise the nature of the structural continuum of stem to phrase-like structures 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.[87] Example 246 has two possible interpretations.

246. 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 247 is structurally grammatical and semantically unambiguous, since the sequential interpretation is not possible due to the meanings of the lexical items.

247. noh-dbëhna-më -r
die-sick -R.PST-3SM
He was deathly sick.

3.3.1.3.1.6 Constraints on serial verbs and compounds

Semantic constraints on serial constructions have some formal (structural and distributional) correlates. In general, the more semantically constrained a structure is, the more internally coherent it is. Serialised constructions may be compared and distinguished by this metric as well as distinguished as a whole from higher-level sentential structures. Features which contrast serial constructions with higher-level constructions will be included in the discussion of the constraints on serial constructions. Some of the contrastive features of serial constructions themselves are summarised as follows:

Idiomatic compounds

1. The meanings of individual roots do not equal the meaning of the complex.
2. Roots do not individually bear a role relationship to an NP in the clause. Only the complex construction as a whole bears a role relationship to the NP's in the clause.
3. There is no equivalent sentential paraphrase for the idiomatic compound which uses the same elements of the compound.
4. The scope of a negative word and elevational affixes encompasses the entire complex.

Pure compounds

1. The combined meanings of individual roots equal the meaning of the complex with only minor extensions of meaning.
2. Individual roots do bear role relationships with NP's in the clause but these roles are not those which the complex as a whole bears with them.
3. A sentential paraphrase of the compound using the same elements is possible, however the meaning of such a paraphrase is not equivalent to the meaning of the pure compound.
4. The scope of a negative word encompasses the entire complex.

Serial constructions

1. The meaning of the complex is derived directly from the meanings of its parts.
2. Roots individually bear role relations with NP's in the clause. These roles are often the same roles that the complex as a whole bears with those NP's.
3. A sentential paraphrase of a 'merged' serial construction is meaningful and carries the exact same logical content. The paraphrase differs only in factors of focus or conceptualisation of events as two or more related events rather than as a single whole event.
4. The scope of a negative word may extend to any one or more roots in the complex. Elevational affixes do not always encompass the entire set of roots.

As with serial constructions, compounds may have only one actor. Co-occurrence restrictions for compounds 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 for compounds and idioms.

Compounds and idioms are more internally cohesive than 'merged' serial constructions with respect to the scope of the negative and elevational markers.

The negative covers the entire complex verb, the elevational prefix also encompasses the entire complex. If an elevational suffix occurs, it must designate the same direction as does the prefix. These restrictions do not apply to 'merged' serial constructions.

Case frames

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 3.5.2.2.5.

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.152 ff. 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 248(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 248(b).

248(a). *hodaryt yoht yak-fët -më -t -t
axe string.bag get-string.from.head-R.PST-3SF-3SF

(b). hodaryt yak-hatë yoht fët -më -t -t
axe get-SA *string.bag string.from.head*-R.PST-3SF-3SF
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 (example 249(c)). By this feature the serial verb construction acts like a single complex predicate (as of a 'merged clause').

249(a). wa -rim -ak -hɨta-n -m
IMPER-ELEV-*get-put* -2S-3PL
Get them (and) put them away from me!

249(b). wa -yarim-ak -hɨta-n -m -ko
IMPER-ELEV *-get-put* -2S-3PL-ELEV
Get them toward me (and) put them up (there)!

(c). wa -rim -ak -kah-n -n wa -rim -hɨta-n -m
IMPER-ELEV-*get*-IRR-2S-DEP IMPER-ELEV-*put* -2S-3PL
Get (them there) away from me, and if/when you do, put them (there) away from me!

Illocutionary force

All verb roots in a serial construction must exhibit the same illocutionary force; thus, the commands in example 249 apply to both 'getting' and 'putting'.

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. 3.6.2.1.2).

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 250(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.

250(a). ritm finji tandhi-ak -ni-r -më -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). nɨfrim haynimëtm
new (uncooked) she.took.them

(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). nɨfrim 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

3.3.1.3.2 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 69). 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) in actor or patient roles. Other noun roots which are incorporated are generic or indefinite objects in a patient role in the clause.

Derived transitive verbs may host two unincorporated 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 3.5.2.2.4). Example 251 illustrates clauses of this type.

251(a). Act 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.

(b). Act A
yënr ñungramt kɨna-më -t -r
child throat dry -R.PST-3SF-3SM
A child('s) throat is dry on him.

Example 252 exhibits the incorporated body part. The syntactic result of incorporation is that (1) the incorporated noun occurs to the left of the first verb root, (2) it can no longer be coreferenced on the verb, and (3) it loses its own phrase terminator, (4) it then may be bounded by verbal inflection as any other verb stem (c).

252(a). yënr wura-yëhne -më -r moh -ohat-n
child foot-descend-R.PST-3SM *hole-path*-S.SET
A child went down into the hole (up to his) foot.

(b). yënr ñungram-kɨna - më -r
child throat -dry - R.PST-3SM
A child is thirsty.

(c). 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.

253. *rërho ñungram-kɨna-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 254.

254(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 255.

255. 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 115(b)). The roots [naku] *sago palm* and [nɨta] *pound* with four phonetic syllables reduce to three syllables with the loss of the epenthetic vocoid of the first syllable of [nɨta].

Dependent clauses

Noun roots may be incorporated into the verb stem of the predicates of relative clauses, (non)-possessed modifiers, (cf. section 3.2.3.2.4), and nominal clauses (cf. section 3.2.3.2.6). 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 serialise. 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 fulfill the general constraint of conjoining commonly associated elements in a serial construction.

It is important to emphasise that the primary constraint is the pragmatic one which restricts serialisation 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 serialisation since, although virtually any part of the body can be a source of pain, the head is a very frequent one. Serialisations like example 254(b), however, are not readily accepted by all Alamblak 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 characterising 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 256(a) is quite acceptable but (b) with the imperfective aspect is somewhat better, and Alamblak speakers clearly prefer the (non)-possessed modifier in (c) to either (a) or (b).

256(a). thi -was -më yimar
turtle-spear-R.PST *man*
the man who speared {*some turtles* / *? turtles*}

(b). thi -was -më -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-* / **some turtles-*} *spearing man*

One or another clause in example 256 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 the noun may be interpreted equally well as either a generic or a 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 commonly employed for reporting generic situations.

257(a). fëh-tuf+nah-yuk ñam
pig-shoot -PUR *arrows*
arrows for shooting pig

(b). kuñ -hingna-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-a-vis unique individuals and specific objects, can form a

common association with states or events meeting the general constraints 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 syntactic constraint on noun incorporation.

We have also noted that noun incorporation in Alamblak 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-a-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-a-vis the predication of the matrix clause.

3.3.1.3.3 Adjective root incorporation

The verb stem may manifest a descriptive adjective as one of a series of roots (cf. Table 69). The incorporated descriptive adjective follows the verb root which bears a semantic role relationship with the NP with which the adjective is associated.

Verb serialisation 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);[88] 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 so-called launching NP's in various clause types are enclosed in Table 72.

Table 72: 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 manifesting a location or time setting role), or both.

Before outlining further constraints on adjective incorporation, the basic pattern will be illustrated in the examples in 258 in which the quantifier -buga *all* is incorporated.

Quantifier of a subject NP of an 'intransitive' PRED:

258(a). yima -m hoe -buga-më -m
person-3PL *sleep-all* -R.PST-3PL
The men all slept.

Quantifier of an obj. NP of an 'intransitive' PRED:

(b).
yima -r kmi -m hoe -hëtfas -buga-më -r -m
person-3SM *place*-3PL *sleep-from.place.to.place-all* -R.PST-3SM-3PL
A man slept from place to place (at) all (of) the places.

*Quantifier of a Subj.NP of a 'transitive' PRED:

(c).
*yima -m fëh-r was -buga-më -m -r
person-3PL *pig*-3SM *spear-all* -R.PST-3PL-3SM
**The men all speared the pig.*

Quantifier of an In. Obj. NP of a 'transitive' PRED:

(d).
yima -r fëh-m was -buga-më -r -m
person-3SM *pig*-3PL *spear-all* -R.PST-3SM-3PL
A man speared all the pigs.

Quantifier of an In. Obj. NP of a three-place PRED:

(e).
met -t yima -m fëhr hay -buga-më -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 258(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).
Out.Obj.
met -t yima -r fëhm hay -buga-më -t -r
woman-3SF *person*-3SM *pigs give-all* -R.PST-3SF-3SM
A woman gave a man all the pigs.

Quantifier of In. and Out. Obj. NP of a three-place PRED:

258(g).

	In.Obj.		Out.Obj.			U	
met	-t	yima	-m	fëhm	hay -buga-më	-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 259 the man put all of the fish into all of the baskets and the baskets were all full.

259.

	In.Obj.		Out.Obj.			
yima	-r	jing	-m	yiram hëmbre	-kih -buga-më	-r -m
person-3SM		*basket*-3PL		*fish*	*put.into-full-all*	-R.PST-3SM-3PL

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:

260(a). ginafm fa -nfri-më -an-m
grubs eat-new -R.PST-1S-3PL
I ate grubs alive.

'Physical property' descriptive adjective:

(b). miyukham fa -nfri-më -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 serialisation of verb root and adjective cannot be equated with the relationship between the same adjective and a head noun of an NP. Consider example 261.

'Dimension' descriptive adjective:

261. yënr fëhm h+ti-bro-më -r -m
child pigs see -big-R.PST-3SM-3PL
A child saw pigs (as being) big.
(= Pigs appeared large to the child).

Example 261 is not semantically equivalent to its parallel sentence with the adjective in the noun phrase, (yënr bro fëhm h+timërm *child big pigs he.saw.them, A child saw big pigs.*) The speaker of sentence 261 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.

262. m+titëft teh -yukay-më -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 262 is not an appropriate paraphrase for example 263 with the adjective in the noun phrase.

263. yukay m+titëf-t teh -më -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 262, the border between grammatical categories of adjective and verb becomes very fuzzy.[89] 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.

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 262). 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.

3.3.1.3.4 Time word root incorporation

An incorporated time word root (cf. 3.1.2.9) 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.

264. yaw -krif -më -r
walk-after.noon-R.PST-3SM
He walked until afternoon.

3.3.2 Non-finite verb phrases

Two independent non-finite VP's are described below, the copular and existential VP.

3.3.2.1 Copular verb phrase

The general form of the copular verb is displayed in Table 73.

Table 73: Copular VP			
Function	+ Nucleus	+ Copular	+ Terminator
exponents	nominal-verbal base (Table 20) POSS PH PUR REL CL (Non)-POSSD Mod.	-e	(v. Table 65)

Copular verb forms are prolific. Among the few elements that do not manifest its nucleus are stative verbs and the existential verb. The semantic interpretation of the copular verb is discussed in contrast with equative constructions in section 3.4.1.1. 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.

265(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 -më -t
house-3SF *sitting*-R.PST-3SF
It was a house.

3.3.2.2 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 expressions employ the equative clause form.

Table 74: Existential VP

Functions	± Proximity	+ Nucleus	+ Terminator
exponents	a- *near* u- *far*	të ∿ šë *be*	(v. Table 65)

The existential verb is illustrated in example 266 below.

266(a). a -šë-r
*near-is-*3SM
He is here.

(b). të-r
*is-*3SM
He exists.

3.4 Syntax of independent clauses

3.4.0 Introduction

There are two general types of clauses in Alamblak, 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 section describes the structure of independent clauses; dependent clause types are discussed in sections 3.6 and 3.7. Dependent clauses which are embedded in the noun phrase have been discussed in section 3.2.

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 (section 3.3) are discussed for the various structural types of clauses rather than being discussed in a separate section devoted to predicate types.

3.4.1 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 75.

The transitivity parameter as used in this section indicates various combinations of phrasal constituents of the clause, i.e. peripheral NP's, subject, objects, and predicate.

Table 75: Typology of independent clauses								
		Transitivity						
Polarity	Declaration	Copulative	Equative	1- or 2-place clause	2-place clause	2- or 3-place clause	3-place locative clause	3-place clause
Affirmative	Declarative	+	+	+	+	+	+	+
	Yes/No[1] INTERR	+	+	+	+	+	+	+
	Content INTERR	+	+	+	+	+	+	+
Negative	Declarative	+	+	+	+	+	+	+
	Yes/No INTERR	+	+	+	+	+	+	+
	Content INTERR	+	+	+	+	+	+	+

[1]Declarative and yes/no interrogative clauses have the same syntactic form but contrast intonationally. Since the semantic contrast is so basic they are distinguished here.

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.

3.4.1.1 Transitivity parameter

There are seven features in the transitivity parameter of clause types (Table 75). The traditional terms 'intransitive' and 'transitive' have not been employed here; they are discussed in section 3.5.2.2 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 76 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 Alamblak in a context-free way. Table 76 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 cognitively obligatory participants must be manifested as NP's in the clause.[90]

Table 76: Transitivity features in clause types

		Function slots					
		Periph. functions	Locative[1]	Subject	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	±		+	+	+	+

[1]The locative function is subsumed under the periphery for all clause types other than the three-place locative clause.

Unmarked (declarative, affirmative) clauses are used below to illustrate each transitivity type. A display of each clause type is presented in Tables 77, 78, and 80-82. A general discussion of rules, e.g. co-occurrence restrictions, permutability, etc., will follow the presentation of the seven basic clause types.

3.4.1.1.1 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.

Table 77: Copulative clause

Functions	+ Subject	+ Predicate
exponents	NP	Copular verb (cf. § 3.3.2)
	PNP	Existential verb (cf. § 3.3.2)
	ϕ[1]	

[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 Part One p.5 and in note 90). To account for those cases, a zero manifestation is allowed for in descriptions of clause types.

267(a). yimar broer
man he.is.big
The man is big.

(b). yimar asër
man he.is.here
The man is here.

3.4.1.1.2 Equative clause

Table 78: Equative clause

Functions	(Periphery)	+ Subject	+ Outer object	+ Predicate
exponents	Allative NP Referent NP G.Setting NP S.Setting NP	(v. Table 77)	NP PNP Resemblance P	VP manifested by classificatory verbs

The equative predicate identifies the subject as being equivalent to the object either totally, e.g.

268. Subj.
Pianr yima yënr korhwër
Pian person child he.sits
Pian is a human child.

or in some partial (and unspecified) way, e.g.,

269. yënr tukia hafit korhwër
child myself like he.sits
The child is like me.

The copulative (Table 77), 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 270.

270(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 in 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.

271(a). kaunsel wa -tëh -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 tëh *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 tëh *'standing'* is the appropriate classificatory verb in example 271(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 3.3.1.2 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. 3.4.3). A relator-related phrase, the resemblance phrase, may manifest the outer object function. It is described in Table 79.

Table 79: Resemblance phrase

Functions	+ Related nucleus	+ Relator
exponents	NP	kañjë *like*
	GEN. relative clause	kindë *like*
	Nominal clause	hafit *similar measurement*

Resemblance phrases are illustrated in an equative clause and in a 2-place clause in example 272.

272(a). RES. Phrase

ɨndar yënr tukia hafit korhwër
this child myself similar he.is.seated
This child is similar to me (e.g. in size).

(b). RES. Phrase
G. REL. Cl. Relator

yënr nërwit gurwër yifemr gurwa kañjë
child slit.drum beats father beats like
The child beats the slit drum like (his) father beats.

The resemblance phrase (RES P) is structurally similar to case-marked relator phrases (cf. 3.4.2). The structure is most like a referent NP (cf. Table 89). 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. A further example of an equative clause manifesting a resemblance phrase is given in 273.

273. RES P

ɨnd yimar taprfat kindë tëhwër[91]
DEM *man wren like he.is.standing*
The man is a wren.

3.4.1.1.3 1/2-place clause

The 1/2-place clause structurally contrasts with other clause types by its feature of an optional inner object[92] function slot (cf. Table 76). Subtypes of the 1/2-place clause (as well as other types) will be discussed in section 3.5.2.2, where possible exponents of the predicate and object slots will be discussed on a semantic basis.

Table 80: 1/2-place clause

Functions	(Periphery)	+ Subject	± Inner obj.	+ Predicate
exponents	Adessive NP Path NP Referent NP S.Setting NP G.Setting NP Allative NP Instrument NP Resemblance P Purpose CL.	(v. Table 77)	NP PNP ∅	VP

The 1/2-place clause is illustrated in example 274.[93]

274(a). Subj.

yima -r noh-më -r
person-3SM *die*-R.PST-3SM
A man died.

(b). U

In. Obj.

yima -r nan-ho kuñ -t noh-më -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-më -r
1S -GEN *house*-3SF-S.SET *person*-3SM *die*-R.PST-3SM
A man died in my house.

(d). U

In. Obj.

yifung-t -n yima -r nan-ho kuñ -t noh-më -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.

3.4.1.1.4 2-place clause

The 2-place clause structurally contrasts with other clause types by the obligatory absence of the outer object when the inner object is manifested and conversely the absence of the inner object when the outer object is manifested. That is, the object may either be coreferenced on the verb (and thus inner object) or not coreferenced (and thus outer object).[94]

Table 81: 2-place clause					
Functions	(Periphery)	+ Subj.	[+ / −] Inner Obj.	[− / +] Outer Obj.	+ Predicate
exponents	(v. Table 80)	(v. Table 77)	NP PNP ∅	NP PNP ∅	VP

The 2-place clause is illustrated in example 275.

275(a).

Subj.	In. Obj.		U
yima -r	kuñ -t	fknay-më -r	-t
person-3SM	*house*-3SF	*enter*-R.PST-3SM-3SF	

A man entered a house.

(b).

Out.Obj.		
yimar	kuñ -t	fknaymër
man	*house*-3SF	*he.entered*

A man entered a house.

(c).

Ins. NP		In. Obj.			U
doh -e	yima -r	kuñ -t	fknay-më	-r	-t
canoe-INS	*person*-3SM	*house*-3SF	*enter*-R.PST-3SM-3SF		

A man entered a house by canoe.

3.4.1.1.5 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 82: 2/3-place clause					
Functions	(Periphery)	+ Subject	+ Inner object	± Outer object	+ Predicate
exponents	(v. Table 80)	(v. Table 77)	(v. Table 81)	(v. Table 81)	VP

The 2/3-place clause is illustrated in example 276 below.

276(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).

In.Obj.	U	Out. Obj.
yimar yënt gëbrërnamërt		hëhrampam

man girl rubbed.he.her medicine
A man rubbed a girl (with) medicine.

(c).

INS NP
yimar yënt gëbrërnamërt hëhrampa-e

man girl rubbed.he.her medicine-INS
A man rubbed a girl with medicine.

(d).

INS NP	Out. Obj.
rmëntha-e yimar yënt gëbrërnamërt	hëhrampam

cloth -INS *man girl rubbed.he.her medicine*
A man rubbed medicine (on) a girl with a cloth.

3.4.1.1.6 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 83: 3-place locative clause

Functions	(Periph).	[+ ±] Locative	+ Subject	+ Inner obj.	[− +] Outer obj.	+ Predicate
exponents	(v. Table 80)	S.SET NP	(v. Table 77)	(v. Table 81)	(v. Table 81)	VP

The 3-place locative clause is illustrated in example 277 below.

277(a).

S.SET NP		Subj.	In.Obj.		U
jing -t	-n	yima -r	yira-m	hëmbre -më -r	-m

insect.basket-3SF-S.SET *person*-3SM *fish*-3PL *put.into*-R.PST-3SM-3PL
A man put fish into an insect basket.

277(b).

	In. Obj.		Out. Obj.			U
yima -r	jing	-t	yira-m	hëmbre	-më -r	-t
person-3SM	*insect.basket*-3SF		*fish*-3PL	*put.into*-R.PST-3SM-3SF		

A man filled an insect basket (with) fish.

(c).

S.SET NP		In. Obj.		U	Out. Obj.
kuñ -t -n	yimar	jingt	hëmbremërt		yiram
house-3SF-S.SET	*man*	*insect.basket*	*filled.he.it*		*fish*

A man filled an insect basket (with) fish in a house.

The peripheral specific setting phrase in example 277(a) is manifested as inner object in example (b), and the inner object of example (a) is manifested as outer object in example (b).

3.4.1.1.7 3-place clause

The 3-place clause structurally contrasts with other clause types by an obligatory outer object slot.

Table 84: 3-place clause

Functions	(Periphery)	+ Subject	+ Inner object	+ Outer object	+ Predicate
exponents	(as in Table 83)				

The 3-place clause is illustrated in example 278 below.

278.

Subj.	In. Obj.	Out.Obj.		U	S.SET NP
met -t	yima -r	nua -m	hay -më -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 generalisations 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.180). 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.[95] Peripheral slots seem to be able to intervene anywhere within the clause.

3.4.1.2 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 2.4.

Table 85: Distinctive features of the declaration parameter

Transitivity type	Declarative	Yes/no interr.	Content interrogative
Non-finite clauses (copulative)	(unmarked)	(unmarked)	Subject ... Predicate [QNP] [{COP VP / EXIST VP} Copulative Interrogative]
Finite clauses (equative, 1/2-place, etc.)	(unmarked)	yes/no intonation (cf.2.4)	... QNP Predicate VP [+ PRSUP]

Table 85 indicates that in a copulative content interrogative clause, either the subject function is manifested by a question noun phrase (QNP),[96] 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. Following the presentation of the structure of the basic (neutral) content interrogative clause, subtypes and their real and rhetorical functions will be discussed.

3.4.1.2.1 Copulative content interrogative clause

In the copulative content interrogative clause an interrogative element must manifest either the subject or the predicate function.

279. fitëh yiman broem
which men big.are.they
Which men are big?

280. (yimam) frëhem
(men) who.are.they
Who are {the men / they}?

3.4.1.2.2 Finite content interrogative clauses

Table 85 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 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 281 illustrates several forms of the content interrogative clause.

281(a). Subj.
frëh-r kaunsel tëh -w -a -r?
who -3SM *counsellor standing*-IMPF-PRSUP-3SM
Who is the counsellor?

(b). Al NP
fitëhko yi-më -r
where.to go-R.PST-3SM
Where did he go?

(c). LOC NP
fitëmbha nua -m ton-w -a -t -m
which.place food-3PL *fry*-IMPF-PRSUP-3SF-3PL
Where is she frying the food?

(d). Subj.
frëh-m nua -m ton-w -a -m -m
who -3PL *food*-3PL *fry*-IMPF-PRSUP-3PL-3PL
Who is frying the food?

281(e). Out. Obj.

met -m tamëh-m yayk-w -a -m
woman-3PL *what* -3PL *get* -IMPF-PRSUP-3PL
What are the women getting?

(f). INS NP

tamëhtet-e tat-rhw-a -r -t
what -INS *hit*-FUT-PRSUP-3SM-3SF
With what will he hit it?

Note that in example 281(e) the QNP manifests an outer object NP even though it questions a semantic role which is encoded by an inner object in declarative clauses (viz. patient).

Types of interrogative clauses

Real questions

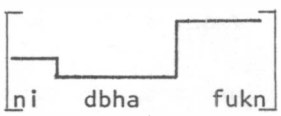
Three types of questions are covered here, neutral, leading and alternative. Echo questions have not been investigated.

Neutral

The neutral interrogative type is the basic content interrogative described above.

Leading

Leading questions which have been observed expect a negative answer. They are of two types, both yes/no interrogatives. The first, illustrated in 126 (repeated here as 282) occurs as a positive clause with marked intonation.

282. 

you morning bathed.you
You did not bathe this morning, did you?

The second type is a negative clause which co-occurs with the verb ka(muka) *I say/think* (283). The same construction with a positive clause produces a neutral question (284). These clauses manifest the unmarked intonation as described in section 2.4.

283. ka fiñji yukrfë[97]
say/think NEG *bathe*.IRR.I.PST.2S
I wonder, did you not bathe?

284. ka bi fukn
say/think finished bathed.you
I wonder, have you bathed?

Alternative

The alternative question sentence is described in section 3.6.2.2.1.3.

Rhetorical questions

Questions have been observed to be used rhetorically to express affirmation of a fact or a conviction, uncertainty or deliberation, and a negative evaluation opinion.

Affirmation of a fact

The common unmarked yes/no interrogative can be used to affirm a fact or conviction as illustrated in 285 below.

285. rëm dbha fukm? Adukayanhowahn; tiksa afë
3PL *morning bathed.they* *think.worry.do.not.you* *teacher* NEG

kfërhwatrm
say.will.not.he.them
Did they bathe this morning? (Of course). Do not worry; the teacher will not be angry with them.

Uncertainty or deliberation

Uncertainty or deliberation may be expressed by a content interrogative manifesting a hortative predicate as illustrated in 286.

286. fiñji akfëa?
what *should.say.I*
What should I say? (= I don't know what to say.)

Negative evaluation

A negative evaluative opinion can be expressed with the use of the question form 'why' in a content interrogative clause. In fact, the 'why' question usually connotes a negative evaluation and is seldom used in real questions.

287. Tamëmpnë dukayanhowa? Ni dbha fukn.
*what.*REF *think.worry.*IMPF.PRSUP *You morning bathed.you*
Why are you worrying? (don't). You bathed this morning.

3.4.1.3 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 86.

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.

Table 86: Distinctive features of negative clauses

	VERBAL MODE		
	Declarative	Hortative (non-past)	Hortative (past, i.e. contrafactual)
Non-finite clauses (copulative)	... + Negative ... nhai *no*	---	---
Transitivity type: Finite clauses (equative, 1/2-place. etc.)	... + Neg ... + Pred. fiñji *not* (non-FUT) VP [+ IRR, + PRSUP] afë *not* (neg of uncertainty) tafitë *not yet* nhai *no*	... ± Rhetorical + Pred predicate [VP: mi *say* [+ FUT] ---] [VP [+ 1.person, + HORT.] VP [+ NEG., + HORT., + PR]]	... + Rhet. + Neg + Pred Pred. VP: may *say* [+ IRR, + PST] afë VP [+ 1.person, + FUT, + IRR]

Note: nhai *no* only rarely manifests the negative function in finite clauses.

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. The changes in scope resulting from possible permutations have not been investigated here. 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 288 below.

Negative copulative clause

288. yimar nhai broer
man no big.is.he
The man is not big.

Negative finite declarative clauses

289(a).
Neg
kaunsel fiñji tëh -r -më -w -a -r
counsellor NEG *standing*-IRR-R.PST-IMPF-PRSUP-3SM
He was not being the counsellor.

(b).
Neg
tafitë rër noh-r -fë -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
afë hi -rhwat -r -m nuam
NEG *give*-FUT.IRR-3SM-3PL *food*
He will not give them food.

Negative hortative clauses

290(a).
Rhet. Pred.
mi -rah-r kaunsel a -tëh -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.
yënr 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.)

(c). nuam a -yay-wah -n -m
food HORT-*eat*-NEG.HORT.PR-2S-3PL
You should not eat food. (to a person who is eating or about to eat)

290(d). Rhet.Pred.

yënr mi -rah-r jingt a -hëmbre -an-t yiram
boy say-FUT-3SM *insect.basket* HORT-*put.into*-1S-3SF *fish*
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.HORT.PR-3SF-3SM
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.

Negative contrafactual hortative clauses

291(a). Rhet. Pred. NEG

yimar may-r -më -r kaunsel afë tëh -rhwat -a
man say-IRR-R.PST-3SM *counsellor* NEG *standing*-FUT.IRR-1S
The man (should) have said, "I will not be the counsellor".
(= The man (should) not have been the counsellor.)

(b). Rhet. Pred. NEG

yënm may-r -rë -m afë hoi -rhwat -nëm
boys say-IRR-N.PST-3PL NEG *sleep*-FUT.IRR-1PL
The boys (should) have said, "We will not sleep".
(= The boys should not have slept.)

(c). Rhet. Pred. NEG

yimar yënt may-r -fë -r kahpam afë gëbrërna-rhwat -an-t
man girl say-IRR-I.PST-3SM *oil* NEG *rub* -FUT.IRR-1S-3SF
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 3.3.1.1.2 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).

292. yënr tamëhm a -yay-wah -r
child what HORT-*eat*-IRR.HORT.PR-3SM
What should the child not eat?

3.4.1.4 Voice

The verbal exponent of finite clauses has been discussed in section 3.3. 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. note 96). 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 293(a) and (b).

293(a). yima-f mɨy -m pok-rah-f -m
man -3D *tree*-3PL *cut*-FUT-3D-3PL
(Two) men will cut (the) trees.

(b). mɨy -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'.[98] 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.

294. yima-m pok-rah-m
man -3PL *cut*-FUT-3PL
The men will cut (themselves).

Examples 294 need not be interpreted reflexively if another subject or object is understood in the linguistic or extralinguistic context. See section 3.5.2.2.2 for a detailed discussion of reflexivity.

3.4.2 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.[99] It is easier to associate these NP's with specific semantic roles than it is with nuclear NP's (cf. section 3.5.1, role structure).

An overview of relations encoded by the peripheral 'relator-related' phrases is given in Table 87.

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. Table 88-90 present an overview of basic structural contrasts between peripheral NP's. Exponents of the terminator function are person-number-gender markers (cf. Table 34, p.96). The emphatic and elevational markers are explicated in sections 3.2.3.1.2 and 3.2.3.1.3.

Table 87: The semantics of peripheral noun phrases

Relator markers	Semantic Specifications											
	At	To	Toward	From	In relation to	In	On	Along	By means of	Efficient cause	Comitative	Animate head
Adessive -kor	+	+	-	-	-	-	-	-	-	-	-	-
Path -oha	-	-	-	-	-	-	-	+	-	-	-	±
Referent -pnë	+	+	?	+	+	-	-	-	-	+	+	±
Specific setting -n	+	-	-	-	-	+	+	-	-	-	-	±
General setting -nanë	-	-	-	-	-	+	+	-	-	-	-	±
Allative -ko	-	-	+	-	-	-	-	-	-	-	-	-
Instrument -e	-	-	-	-	-	-	-	-	+	-	-	-

Table 88: Peripheral NP's 1					
	Related nucleus	Relator	Terminator	Emphatic marker	Elevational marker
Adessive NP	+	+	±	±	±
Path NP	+	+	+	±	±

Table 89: Peripheral NP's 2				
	Related nucleus	Terminator	Relator	Elevational marker
Referent NP	+	+	+	±
Specific setting NP	+	+/-/±[1]	+	±

[1]This notation means that the terminator slot must not be manifested under certain circumstances but must be manifested or is optional under others (cf. section 3.4.2.4, specific setting NP).

Table 90: Peripheral NP's 3		
	Related nucleus	Relator
General setting NP[1]	+	+
Allative NP	+	+
Instrument NP	+	+

[1]The general setting NP does rarely exhibit a terminal slot following the relator (cf. the discussion of the general setting NP of this section).

3.4.2.1 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 91: Adessive NP and NP base

Func	+ Nucleus	± Terminator	± Emphatic	± Elevational	+ Related Head	+ Relator
exp.	CO COOR NP Base AD NP Base	PNG markers (v. Table 34)	-n 'emphatic'	Elevational markers (v. Table 35)	NP Base LOC complex base	-kor

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.

Adessive role

Adessive, defined as the locale at which a state or event is centred, is illustrated by example 295.

295(a). Adessive NP

metm yimaroh mong-kor grhaywm
women men's back-AD *dance.they*
Women dance at the back of the men. (= Women dance behind the men.)

(b). AD NP

fiñji tëhrmëm bus -kor-t
NEG *they.did.not.stand forest*-AD -3SF
They did not live in the forest.

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.

296. Adessive NP

womr briha -kor fakrmemër
the.other/another outside-AD *ran.in.fear.he*
The other/another ran away in fear outside.

Exponents of the AD NP base

Locative complex base

The locative complex base was referred to in section 3.1.2.8. It is composed of a head noun plus a locative position as displayed in Table 92.

Table 92: Locative complex base		
Functions	+ Nucleus	+ Location
exponents	noun root	positional root (v. § 3.1.2.8.2)

For example,

297(a). kuñ -kimb
house-beside

(b). doh -dañ
canoe-along.the.middle

Example 298 illustrates an adessive NP which includes a locative complex base.

298. AD NP
LOC CMPLX B
kuñ -kimb -kor tëhwër
house-beside-AD *is.standing.he*
He is standing beside the house.

3.4.2.2 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 93: Path NP and NP base						
Func	+ Nucleus			+ Terminator	± Emphatic	± Elevational
exp	Path NP Base:			PNG markers (v. Table 34)	-n 'emphatic'	Elevational markers (v. Table 35)
	Func	+ Related Nucleus	+ 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 nucleus function; that distribution is necessary when co-occurring with non-motion predications.

299(a). Path NP

yhoty-oha -t kawwr
road -PATH-3SF *walk.*IMPF.*he*
He is walking along the road.

(b). Path NP

LOC CMPLX B

kuñ -kimb -oha -t kawwr
house-beside-PATH-3SF *walk.*IMPF.*he*
He is walking along beside the house.

3.4.2.3 Referent NP

The referent and specific setting NP's differ from the adessive and path NP's in relative ordering of constituents.

Table 94 Referent NP

Func	+ Nucleus	+ Terminator	+ Relator	± Elevational
exp.	NP Base AD NP Base	PNG markers (v. Table 34)	-pnë	Elevational markers (v. Table 35)

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. 3.2.4.3); it marks the cause (i.e. reason) in an efficient cause sense (cf. section 3.6.1); 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.

Adessive role

300. Referent NP

ka -wa-kërthëbi -më -t tembt nungwar tu -hombha-r -pnë
CAUS-*up-twist.and.turn*-R.PST-3SF *shotgun bird* E/R.PRON-*place* -3SM-REF
The shotgun fatally wounded the bird up where it was.

Allative role

301. Referent NP

yën -r -pnë hɨnamëanr nungwar
child-3SM-REF *brought.I.it bird*
I brought a bird to the child.

Elative role

Elative is defined as the source or locale away from which a predication is directed.

302. Referent NP
ɨnd-ëmbha-r -pnë mithonalgetanëm
DEM-*place*-3SM-REF *floated.down.all.the.way.we*
From there we floated down all the way.

303. REF NP
nhai wom -m -pnë wikna-r -më -an-r
NEG *other*-3PL-REF *buy* -IRR-R.PST-1S-3SM
I did not buy it from anyone.

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.

304. 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.

305. REF NP
ɨnd na-t -pnë fakrmemët
DEM *do*-3SF-REF *ran.away.in.fear.she*
Because of that happening she ran away in fear.

One of the interrogative structures translated 'why' utilises 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 3.1.2.5).

306. REF NP
na tamë-m -pnë nohwaa
I what-3PL-REF *am.I.dying*
What am I dying from?

Comitative function

The relator marker -pnë also functions as a *comitative* marker. The comitative NP has been described in section 3.2.4.3 on coordinate and semi-coordinate noun phrases. A semantic analysis of the comitative NP and its associated NP is presented in section 3.5.2.3. There are structural differences between the comitative NP and the Ref NP with other functions in the clause. For purposes of convenient comparison, the comitative NP is described here in Table 95.

Table 95: Comitative NP					
Func	+ Related nucleus	+ Terminator	[±/+] Relator$_1$	[+/±] Relator$_2$	± Elevational
exp	NP Base	PNG markers (v. Table 34)	-pnë 'comitative'	-rpat *together*	Elevational markers (v. Table 35)

307(a). COM NP
yënr yima -r -pnë yi-më -f
boy person-3SM-COM *go*-R.PST-3D
A boy went with the man.

(b). COM NP
yënr yima -r -rpat yi-më -f
boy person-3SM-*together go*-R.PST-3D
A boy went with the man.

(c). COM NP
yënr yima -r -pnë-rpat yi-më -f
boy person-3SM-COM-*together go*-R.PST-3D
A boy went with the man.

Point of reference (P of R) role

Point-of-reference characterises 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 308 delineates the time of the predicate. Example 308(b) references the time of the clause in a flash-back section of discourse.

308(a). REF NP
ɨnd yha-r -pnë dbëhna-më -w -m
DEM *day*-3SM-REF *sick* -R.PST-IMPF-3PL
At that time they were continually sick.

(b). REF NP
ɨnd-ëmbha hir -ha -muh -nef-t -pnë
DEM-*place float*-CAUS-*go.up*-NOM-3SF-REF
there with reference to going up (river)
(= there, on the way upriver)

When the referent marker characterises the orientation of a spatial position, it relates a head noun root to a positional (cf. locative roots in section 3.1.2.8). 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 309 below.

309(a). LOC P
REF NP
rët-pnë brbë yi-dohra
her-REF *near go*-NONPOSSD
without going near her

(b). LOC P
REF. NP
tik -t -pnë yurak wahegirtwant
table-3SF-REF *above hang.up.you.it*
Hang it above (with reference to) *the table!*

3.4.2.4 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 96: Specific setting NP

Func	+ Related nucleus	+/-/± terminator	+ Relator	± Elevational
exp	NP base positionals Loc. roots Temp. roots Adessive NP base (v. Table 91) Path NP base (v. Table 93)	PNG marker (v. Table 34)	-n	Elevational markers (v. Table 35)

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 nucleus, cannot occur with certain others, and is optional with locative and temporal roots.
The case marker (-n) encodes the roles of interior location, surface location, adessive, and temporal reference. The specific interpretation in each case is predictable from the meaning of the exponent of the head.

Interior location role

Interior location is defined as the locale of a predication which is bounded by a three-dimensional object.

310. S.Setting NP

tu -në kuñ -t -n tëhkfët
E/R.PRON-1D *house*-3SF-S.SET *to.stand*
We (2) ourselves remain in the house.

Surface location role

Surface location is defined as the locale of a predication involving contact with the surface of an object.

311. S.Setting NP

yimënëm yurak-nanë kmiñsëf -m -n
went.we up -G.SET *mountain*-3PL-S.SET
We went up on the mountains.

Adessive role

Adessive is defined as the locale at which a state or event is centred.

312. S.Setting NP
AD NP Base

yimënëm bukt -kor-n
went.we head.waters-AD -S.SET
We went to the headwaters.

Temporal reference role

Temporal reference is defined as the period of time within which a predication takes place.

313. S.Setting NP

nuam watonhitwana dbha -n
food you.fry.for.me morning-S.SET
Fry food for me in the morning!

3.4.2.5 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 97: General setting NP

Func	+ Related nucleus	+ Relator	+/- Terminator
exp	positionals temporal roots terminated adverbs	-nanë -nanëh	--- PNG markers (v. Table 34)

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 nucleus, 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.

Surface locative role

314. G. Set NP

yimënëm yurak-nanë kmiñsëfmn
went.we up -G.SET *mountains.on*
We went up on the mountains.

Temporal reference role

315. 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.

Manner role

Manner role is defined as the manner in which the predication occurs.

316. G.Setting

bumbri-t -nanë pailatr fakrekutabmërt
hurry -3SF-G.SET *pilot* *switched.he.it*
The pilot switched over in a hurry.

3.4.2.6 Allative NP

The allative NP and the instrument NP contrast with other relator phrases in their lack of a terminator function slot.

Table 98: Allative NP

Functions	+ Related nucleus	+ Relator
exponents	NP Base [-animate] positionals	-ko

Note: The allative NP encodes the allative role.

317(a). Allative NP

nayayrahnëm kmi -ko
come.will.we village-AL
We will come to the village.

(b). Allative NP

riënë mku -ko wutëntëmbrat
went.we piece-AL *to.knock.down.breadfruit*
We (two) went to the (other) side to knock down breadfruit.

3.4.2.7 Instrument NP

The instrument NP indicates the manner or means whereby the predicate is carried out.

Table 99: Instrument NP

Functions	+ Related nucleus	+ Relator
exponents	NP Base [-animate]	-e

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 332 and 333 in section 3.5).

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 realised.

Example 318 illustrates the direct manipulation of the instrument by the agent.

318. INS NP

yuf -toa -e gëbrërnamëanr
yuf.*tree-leaf*-INS *rubbed.I.him*
I rubbed him with a Yuf *leaf.*

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 realised.

Example 319 illustrates an indirectly manipulated instrument.

319.
```
                              INS NP
                          ┌──────────┐
maruham nëm kaykwënëm ind yifën  -e
money   we  get.we    DEM carving-INS
We get money by means of the carvings.
```

Example 320 illustrates an instrumental which is somewhere between a direct and indirect use by the agent and which emphasises the means and manner in which the event occurs.

320.
```
          INS NP
        ┌────────┐
yimënëm doh  -e
went.we canoe-INS
We went by canoe.
```

Manner instrument role

Manner instrument is defined as the role of the inanimate entity (including body parts) which is manipulated directly in the action of the predicate by an agent to realise the predication.

321.
```
        INS NP   INS NP
       ┌──────┐ ┌──────┐
yawym tir -e   wura-e   faknihatë     yimër
dogs  hand-INS foot-INS having.gotten went.he
Having nudged the dogs by hand and foot, he went.
```

3.4.3 Nuclear noun phrases (verb agreement)

A nuclear NP is defined as an NP which is either syntactically or cognitively 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 74).

3.4.3.1 General features

The three most common nuclear NP's in Alamblak are subject, inner object, and outer object. These constructs are not understood to be primitive notions in Alamblak grammar.

'Subject' will be discussed in section 3.5.2.3 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 Alamblak 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 Alamblak syntax.

In contrast to the term 'subject', the terms 'direct object' and 'indirect object' as used in traditional grammar can be considerably misleading when applied to Alamblak syntax.

Basic structural patterns of traditional D.O. and I.O. are coincident with Alamblak patterns for 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 Alamblak 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 Alamblak 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 Alamblak, 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 100.[100]

Table 100: Two systems of role encoding by objects

	Traditional constructs			Alamblak constructs		
	Trans	Ditrans		2-place CL	3-place CL	
Semantic case roles	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.

3.4.3.2 Syntactic features

In this section we discuss and illustrate the general syntactic features of nuclear NP's.

In general, the subject NP is unmarked for case, is coreferenced by the first pronominal suffix on the verb, and occurs left-most vis-a-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 322.

322(a).

Subj. NP — A

yima -r yi-më -r

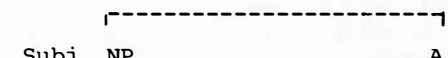
person-3SM *go*-R.PST-3SM

The man went.

322(b).

yima -r fëh-m fak-më -r -m
person-3SM *pig*-3PL *get*-R.PST-3SM-3PL
A man got the pigs.

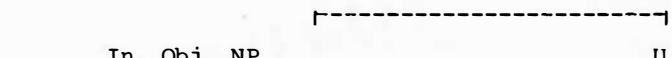
(c).



yima -r fëh-m hay -më -r -t
person-3SM *pig*-3PL *give*-R.PST-3SM-3SF
A man gave her pigs.

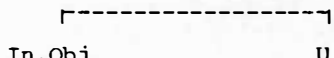
The inner object is unmarked for case and is coreferenced by the second pronominal suffix on the verb.

323(a).



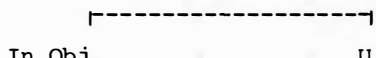
yima -r tu -r -ho kuñ -t fakrme -më -r -t
person-3SM E/R.PRON-3SM-GEN *house*-3SF *run.away*-R.PST-3SM-3SF
A man ran away (to) his own house.

(b).



yima -r fëh-m fak-më -r -m
person-3SM *pig*-3PL *get*-R.PST-3SM-3PL
A man got the pigs.

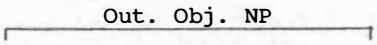
(c).



yima -r met -t hay -më -r -t fëh-m
person-3SM *woman*-3SF *give*-R.PST-3SM-3SF *pig*-3PL
A man gave a woman the pigs.

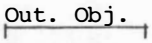
The outer object is unmarked for case and is not coreferenced on the verb.

324(a).



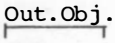
yima -r fakrme -më -r tu -r -ho kuñ -t
person-3SM *run.away*-R.PST-3SM E/R.PRON-3SM-GEN *house*-3SF
A man ran away (to) his own house.

(b).



yima -r fëh-m fak-më -r -m briha -t
person-3SM *pig*-3PL *get*-R.PST-3SM-3PL *outside*-3SF
A man got pigs (in) the forest.

(c).



yima -r met -t hay -më -r -t fëh-m
person-3SM *woman*-3SF *give*-R.PST-3SM-3SF *pig*-3PL
A man gave a woman pigs.

3.5 Semantics of independent clauses

3.5.0 Introduction

The basic structures of the clause and its constituents have been described in section 3.4. 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 section 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. Section 3.5.2 deals with the interrelationship of syntax and semantics. That section investigates aspects of the encoding of semantic roles, the structural reflexes of the semantic features of transitivity, and the notions of referentiality and perspective.

3.5.1 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 in 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 organised 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 characterised. 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) emphasised 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 has been made to describe them both.

3.5.1.1 Orientation roles

Orientation roles provide the spatial and temporal orientation of the proposition. They are summarised as follows with approximating English glosses:

adessive	*at*
path	*along*
allative	*to/toward*
elative	*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 3.4.2. We have therefore only summarised them here and now proceed to discuss interpretation rules associated with the case markers that encode them.

3.5.1.1.1 Adessive NP

As indicated by its label, this case marker may be characterised by the adessive role which it primarily encodes. It exhibits conditioned meaning variants as follows:

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 295 and 296 in section 3.4.

3.5.1.1.2 Path NP

The path NP is characterised by the path role which it encodes, v. example 299 in section 3.4.

Path NP : Path role

3.5.1.1.3 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 generalised 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
Elative role
Efficient cause role[101] 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 300 in section 3.4).

The point-of-reference role relates a locative positional with another NP (v. example 309 in section 3.4).

Most manifestations of the referent NP have potentially 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 308(a) in section 3.4 is repeated here as example 325.

325. ɨnd 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 325 has to do with conceptualisation 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 nucleus co-occurs with a motion verb, and when certain motion verbs co-occur with certain reference 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,

326. Ref NP
yën -r -pnë hɨnamënënr nungwar
child-3SM-REF *brought.we.(2).him bird*
{*We (two) (I) with the child brought the bird.*
We (two) brought the bird {*to* / *from*} *the child.*}

The referent NP in example 326 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.

327. Ref NP
yifën -r -pnë yɨmënëm
carving-3SM-REF *went.we*
{*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 conventionalised strategy for interpreting a sentence such as example 327, except that the elative interpretation appears to be the last choice made.

It is suggested here that example 326 has a well-defined interpretation strategy and example 327 does not, partially because of the nature of the head noun of the referent noun phrase. In example 326, 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.[102] In the case of example 327, 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 328 can only be interpreted as efficient cause.

328. Ref NP
mar-r -pnë hipwënë
sun-3SM-REF *perspiring.are.we*
We are perspiring because of the sun.

3.5.1.1.4 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 location > Surface location > Adessive — with other nouns

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.[103]

The procedure can be illustrated with examples 329 and 330.

329. yimar kuñ -t -n korhwër
man house-3SF-S.SET *sitting.he.is*
A man is sitting in the house.

Example 329 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 330.

330. yimar yurak kuñ -t -n korhwër
man up house-3SF-S.SET *sitting.he.is*
A man is sitting up on the house.

Examples 311 and 312 (section 3.4) 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.

3.5.1.1.5 General setting NP

The G. setting case marker provides a setting for the 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. SET case marker does occur with nominalised adverbs to encode the manner role (cf. the discussion in the next section on modal roles), a function the S. SET case marker does not have. A time reference and a surface location interpretation are illustrated in examples 314 and 315 in section 3.4.

3.5.1.1.6 Allative NP

The allative phrase has a unitary function and therefore can be characterised directly by the allative role (example 317 in section 3.4).

Allative NP: Allative role

3.5.1.2 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 realised'

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 realises 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 realised'

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 realised'

The case markers which are employed to encode modal roles are the G. setting case and instrument case.

3.5.1.2.1 General setting NP

General setting NP: Manner role — with nominalised adverbs

The G. setting case and its interpretation as surface location and temporal reference roles have been discussed under orientation roles (p.214). Nominalised 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 331.

331. G.SET NP

bumbri-t -nanë pailatr fakrekutabmërt
hurry -3SF-G.SET *pilot* *switched.over.he.it*
The pilot switched it over in a hurry.

3.5.1.2.2 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 332 illustrates ambiguity between direct and indirect instrument.

332. maruham kekwënëm ɨnd kury -e
money *get.we* DEM *tongs*-INS
We get money {*with tongs.* / *by means of tongs.*}

The first translation of example 332 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 333 illustrates ambiguity between direct and manner instrument roles.

333. yawyr tir -e faknihatë yimër
dog hand-INS *having.gotten went.he*
Having gotten a dog$_i$ {*by his*$_i$ *forefeet* / *with his*$_j$ *hand(s)*} *he*$_j$ *went.*

The first translation of example 333 is appropriate for the manner instrument interpretation where the 'hands' referred to belong to the dog which the agent took ahold of in some unstated way (in contrast to taking ahold 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.

3.5.1.3 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 Alamblak clauses are defined below.

Agent (Ag)	:	The role of the animate entity which instigates an action or acts of its own accord.
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)
Controlled experiencer (Ctr Exp)	:	The role of the animate entity to which an emotion event or state over which he exerts control is attributed.
Uncontrolled experiencer (Uctr Exp)	:	The role of the animate entity to which an emotion event or state over which he exerts no control is attributed.
Experiencer (Exp)	:	The role of the animate entity to which a perception or cognition event or state is attributed.
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 which is the object of perceptual or cognitive events or states.

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 3.5.2.3. 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 characterised as general frameworks or generalised 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.[104] 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 "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 coexist and that they "correspond to varying goals and applications of theory".[105]

3.5.1.3.1 Actor person marker

The first pronominal suffix on the verb functions to designate the actor, i.e. A(ct), 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
Controlled experiencer
Uncontrolled experiencer
Experiencer
Patient

The actor marker can serve to encode agent, force, experiencer, controlled experiencer, uncontrolled 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.[106] This variability will figure in the discussion on features of transitivity in section 3.5.2.2.

There is a neutralisation in the actor function between typical agentive roles and the non-agentive patient role in intransitive type predications. This neutralisation is typical of most languages which do not differentiate these roles in one-place predications.

Example 334 illustrates the different roles which are encoded by the actor person marker coreferencing a nuclear NP in the clause.

334(a).
Subj (Ag) A
yima -r fëh-m fayk-r -m
person-3SM *pig*-3PL *get* -3SM-3PL
A man got pigs.

(b).
Subj(Uctr Exp) 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).
Subj(For) A
mɨy -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).
(For) A
yën -r rahoy-t korhëy-t -r
child-3SM *post* -3SF *heavy* -3SF-3SM
The post was heavy for the child.

3.5.1.3.2 Undergoer person marker

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
Uncontrolled experiencer
Patient
Range
Referent
Adessive
Path
Allative
Elative
Interior location
Surface location
Temporal reference

Different roles which are encoded by the undergoer person marker coreferencing an inner object are illustrated in example 335 below.

335(a).

In.Obj.(Aff) U

yima -r met -t he -më -r -t fëh-m
person-3SM *woman*-3SF *give*-R.PST-3SM-3SF *pig*-3PL
A man gave a woman pigs.

(b).

In.Obj(UctrExp) U

na nandëm-r hay -fëhtas -r -a
1S *snake* -3SM CAUS-*start.at*-3SM-1S
A snake startled me.

(c).

In.Obj.(Pat) U

yima -r fëh-m fak-më -r -m
person-3SM *pig*-3PL *get*-R.PST-3SM-3PL
A man got the pigs.

(d).

In.Obj.(Rg) U

yima -r kuñ -t hingna-më -r -t
person-3SM *house*-3SF *work* -R.PST-3SM-3SF
A man built a house.

(e).

In.Obj.(Ref) U

yima -r fëh-m fëhtas -më -r -m
person-3SM *pig*-3PL *start.at*-R.PST-3SM-3PL
A man started (at) the pigs.

335(f).

In.Obj. (Ad) U

yima -r ind kmi -t dbëhna-më -r -t
person-3SM DEM *village*-3SF *sick* -R.PST-3SM-3SF
A man was sick (at) the village.

(g).

In. Obj. (Al) U

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.

(h).

In.Obj.(Path) U

yima -m tekthëmb -t tone-më -m -t
person-3PL *river.bank*-3SF *run* -R.PST-3PL-3SF
Men ran (along) the river bank.

(i).

In.Obj.(In.Loc.) U

yima -m bro kuñ -t grha -më -m -t
person-3PL *big house*-3SF *dance*-R.PST-3PL-3SF
Men danced (in) the big house.

(j).

In.Obj.(Sur.Loc.) U

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.

(k).

In. Obj. (Temp) U

yima -m mërm yha -r dbëhna-më -w -m -r
person-3PL *(kind.of.tree) time*-3SM *sick* -R.PST-IMPF-3PL-3SM
Men were being sick (at) the Mërm *tree time (for flowering).*

3.5.1.3.3 Outer object NP

The outer object, the non-coreferenced and non-case marked noun phrase, functions to designate the 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 101). The outer object is less prominent inasmuch as the highly salient affective role cannot be encoded by it, which 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 336 illustrates two of the roles which are encoded by the outer object noun phrase.

336(a). Out.Obj.(Pat) Out.Obj.(In.Loc)

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). Out.Obj(Pat)

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 some pigs.

3.5.2 The interrelationship of syntax and semantics in the clause

Section 3.4 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 centre 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.

3.5.2.1 Role hierarchies and the selection of nuclear noun phrases

Role hierarchies were introduced in section 3.5.1.1 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: {Agent / Force} > {Ctr experiencer / Uctr experiencer / Experiencer / Patient}

Undergoer selection: Affective > {Patient / Range / Referent} > Locative > Temporal
roles reference

By the first hierarchy, if an agent or force co-occurs with an experiencer, the experiencer cannot be coreferenced as the actor (example 337(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 337(b).

337(a).

(Uctr Exp) (Ag) A

yën -m nandëm-r hay -fëhtas -r -m
child-3PL *snake* -3SM CAUS-*start.at*-3SM-3PL
A snake caused the children to start.
(= A snake gave the children a start.)

(b).

Subj (Uctr Exp) In.Obj(Ref) A

yën -m nandëm-r fëhtas -m -r
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 338.

338(a).

In.Obj(Aff) O.Obj(Pat) U

yima -r met -t mugr -m he -më -r -t
person-3SM *woman*-3SF *crocodile*-3PL *give*-R.PST-3SM-3SF
A man gave a woman crocodiles.

(b).

Out.Obj {*Aff / Pat} In.Obj {*Pat / Aff} U

yimar mett mugrm hemërm
**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. Apparently the role hierarchy determines which participant is encoded as inner object rather than an animacy hierarchy, since the non-human affective NP must be chosen as the inner object in preference to the human patient NP.

(c).

In.Obj(Ref) U

na yima -r kuñ -t -n hɨti-më -an-r
1S *person*-3SM *house*-3SF-S.SET *see* -R.PST-1S-3SM
I saw a man in a house.

(d).

In.Obj.(In.Loc.) U

*na yima -r kuñ -t hɨti-më -an-t
1S *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 referent yimar *man*. A referent interpretation of kuñt *house* is not possible since this predicate cannot double on referent roles in the clause (except in a case of inalienable possession, cf. 3.5.2.2.4).

338(e).

						In.Obj(Temp)						U
*nkifra	-m	kmi	-t	-n	mërm	yha	-r	dbëhna-më	-w	-m	-r	
ancestor-3PL		*village*-3SF-S.SET			*(k.o. tree)*	*time*-3SM		*sick*	-R.PST-IMPF-3PL-3SM			

Example (e) is ungrammatical since the temporal reference role is coreferenced as undergoer when a preferential locative role is present in the clause. A temporal reference role can be coreferenced as undergoer only if no other role supersedes it, e.g., example (f).

(f).

		In. Obj (Temp)							U	
nkifra	-m	mërm	yha	-r	dbëhna-më	-w	-m	-r		
ancestor-3PL		*(kind.of.tree)*	*time*-3SM		*sick*	-R.PST-IMPF-3PL-3SM				

The ancestors were sick during the mërm (type of tree-flowering) *time*.

Role hierarchies have been recognised by other linguists. Cook (1971) established a hierarchy of agent > experiencer > instrument > object > source > goal for subject selection and experiencer > object > goal for object selection. Grimes (1975:132) notes that agent, instrument and force outrank other roles for subject position. The undergoer (inner object) selection hierarchy for Alamblak is more detailed than other proposed hierarchies for object selection. Locative roles have preference over the temporal reference role for a nuclear position in the clause; this fact substantiates Halliday's (1970:149) claim that location is more central to the predication process than time.

3.5.2.2 Transitivity

Hopper and Thompson (1980) have defined transitivity as the transferring, or carrying over, of an activity from one 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)[107] 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.

3.5.2.2.1 Case frames of simple verbs

We will begin our discussion by presenting the major verb classes which range from low in transitivity to high in transitivity. 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. 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 parentheses) 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.

Modifications of these basic case frames can be made by syntactic processes affecting the valency of the verb as well as by special exponents manifesting the NP slots in the clause. These modifications will be dealt with separately in sections 3.5.2.2.2 (causative, benefactive, etc.) and 3.5.2.2.4 (inalienable possession).

I. *1/2-place predicates*

Case frame 1:

A	U	
[___ {Ag / Pat}	({Loc / Tem})]	verb types:

Extrinsic			
Statives, e.g.	roh	*sitting*
	tëh	*standing*
	gënngtay	*be cold*
Process, e.g.	noh	*die*
Action, e.g.	yi	*go*
	grha	*dance*

339.

Subj(Pat)	In. Obj (Loc)	A	U[108]
na	ɨndar kuñ -t	gënngtay-an-t	
1S	DEM *house*-3SF	*cold* -1S-3SF	

I am cold (in) this house.

Case frame 2:

[___ Ctr Exp ({Loc / Time})] verb type:

Controlled
Experiencer, e.g. ninge *laugh*
nur *cry*

340.

In. Obj. (Loc)	A	U
ɨndar 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:

[___ {Pat / For} {– / Aff}] verb type:

Intrinsic
Stative, e.g. korhë *heavy*
frkih *full*
ftotoa *light* (i.e. not heavy)

341.

RP(Aff)	(For)	A	U
na	rahoy-t korhëy-w	-t	-a
1S	*post* -3SF *heavy* -IMPF-3SF-1S		

The post is heavy for me.

II. *2-place predicates*

Case frame 4:

[_____ Ag Loc] verb type:

Action, e.g. fknay *enter*
fakrmay *run away in fear*
wita *enter up into*

342(a).

In.Obj(In.Loc)	A	U
kuñ -t	fkne -r	-t
house-3SF	*enter*-3SM-3SF	

He entered a house.

342(b).

In.Obj(El)		A	U
yima	-r fakrmay	-t	-r
person-3SM	*run.away*-3SF		-3SM

She ran away from a man.

Case frame 5:

	A	U	
[___	Uctr Exp	Ref]	verb type:

Uncontrolled Experiencer. e.g. fëhtas *start at*, yindhor *be happy*, fsaskë *be angry*

343.

In.Obj(Ref)		A	U
nandëm-r	fëhtas	-an	-r
snake -3SM	*start.at*-1S		-3SM

I started at a snake.

Case frame 6:

	A	U	
[____	Exp	Ref	verb type:

Perception, e.g. wañ *hear*, hɨti *see*

344.

In.Obj(Ref)		A	U
nandëm-r	hɨti-më	-an	-r
snake -3SM	*see* -R.PST-1S		-3SM

I saw a snake.

Case frame 7:

	A	U	
[____	{Ag / For}	{Ref / Pat}]	verb type:

Action-proc., e.g. was *pierce*, tat *hit*

345.

In.Obj(Ref)		A	U
nandëm-r	was -më	-an	-r
snake -3SM	*pierce*-R.PST-1S		-3SM

I speared a snake.

Case frame 8:

A U
[_____ Ag Aff] verb type:

Reflexive action-process,[109] e.g. yuk *bathe*

346.

In.Obj(AFF)			A U	
yën	-r	fuk	-an	-r
child-3SM		*bathe*-1S-		3SM

I bathed the child.

Case frame 9:

A U
[____ Ag Rg] verb type:

Factitive, e.g. hingay *make*
teng *blow (= make a fire)*
windëh *sing*

347.

In.Obj(Rg)		A	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:

A U O.Obj
[____ Ag Aff (Pat)] verb type:

Action-proc., e.g. gëbrërna *rub*
yeñ *smear*

348.

Subj(Ag)	In.Obj(Aff)		O.Obj(Pat)		A U	
na	yën	-r	hëhrampam	gëbrërnay	-an	-r
1S	*child*-3SM		*medicine*	*rub*	-1S-	3SM

I rubbed medicine (affecting) a child.

IV. *3-place locative predicates*

Case frame 11:

A U O.Obj S.Setting
[____ Ag {Loc-Aff / Pat;} {Pat; / —} {— / Loc}]

verb type:

Locative-action-proc., e.g. hëmbre *put into (a)*
këmbre *put into (b)*
hita *put*

349(a).

In.Obj.(Loc-Aff)	O.Obj(Pat)	A U
na jing -t	yira-m	hëmbray -an-t
1S *insect.basket*-3SF	*fish*-3PL	*put.into*-1S-3SF
I filled the basket (with) fish.		

(b).

S.Setting	In.Obj(Pat)	A U
na jing -t -n	yira-m	hëmbray -an-m
1S *insect.basket*-3SF-S.SET	*fish*-3PL	*put.into*-1S-3PL
I put fish into a basket.		

V. *3-place predicates*

Case frame 12

A	U	O.Obj.	
[____ Ag	Aff	{Pat / Ref}]	verb type:
			Action-Proc., e.g. hay *give*
			nohas *explain*

350.

In.Obj.(Aff)	O.Obj.(Pat)	A U
na yën -r	hëhrampam	hay -më -an-r
1S *child*-3SM	*medicine*	*give*-R.PST-1S-3SM
I gave a child medicine.		

These twelve classes of verbs can be compared on a scale of transitivity. Table 101 arranges them according to the basic feature of the number of obligatory roles which are manifested in the case frames of the verbs. They are also arranged according to their potential modification by derivational processes which affect transitivity. Causative and benefactive processes (discussed in section 3.3) typically add participants to the clause and therefore it has been assumed that they operate at least on predicates of low transitivity. A reciprocal form (cf. 3.3.1.3.1.1) necessarily involves at least two participants, and a reflexive construction, "in which the subject and object refer to the same person (or thing)" (Lyons 1968:361) also operates on predicates which potentially transfer action from one participant to another. Therefore it has been assumed that reciprocal and reflexive forms operate on predicates of high transitivity (cf. the discussion in the next section).

The arrangement of case frames on Table 101 generally follows the pre-theoretical outline. The first five classes may be causativised; 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 causativised, 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 of affective roles (cf. the discussion on p.231-232. 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.

Table 101: Derived case frames

	1 *(die)*	2 *(laugh)*	3 *(heavy)*	4 *(enter)*	5 *(start at)*	6 *(see)*	7 *(pierce)*
	A: {Ag / Pat}; U: ({Loc / Temp})	A: Ctr Exp; U: ({Loc / Temp})	A: [Pat For]; U: [- Aff]	A: Ag; U: Loc	A: Uctr Exp; U: Ref	A: Exp; U: Ref	A: Ag; U: {Ref / Pat}
Transitivity-affecting processes							
Causative	A: [Ag [+ hi control] For [+ low control]]; U: [Pat Exp]	A: Ctr Exp; U: Ref	A: Ag; U: Pat *A: Ag; U: For; 0.0: Aff	A: [Ag [+ hi control] For [+ low control]]; U: [Pat Exp]; 0.0: Loc	A: Ag; U: Uctr Exp	—	—
Benefactive	A: {Ag / Pat}; U: Aff	A: Ctr Exp; U: Aff	A: For; U: Aff; 0.0: ø *A: For; U: Aff; 0.0: Aff	A: Ag; U: Aff; 0.0: Loc	A: Uctr Exp; U: Aff; 0.0: Ref	?	A: Ag; U: Aff; 0.0: {Ref / Pat}
Reflexive	—	—@	—	—	A: Uctr Exp-Ref; U: ø; 0.0: tu	A: Exp-Ref; U: ø; 0.0: tu	A: Ag-{Ref / Pat}; U: ø; 0.0: tu
Reciprocal	—	—	—(?)	—	A: Uctr Exp-Ref; U: ø	A: Exp-Ref; U: ø	A: Ag-{Ref / Pat}; U: ø

@ A reflexive form of case frame two predicates may occur only with a causative construction.

Table 101: Derived case frames (cont.)

	8 *(bathe)*		9 *(rub)*			10 *(put)*				11 *(make)*			12 *(give)*		
	A	U	A	U	0.0	A	U	0.0	S.Set	A	U		A	U	0.0
	Ag	Aff	Ag	Aff	(Pat)	Ag	[Loc-Aff / Pat]	[Pat ___]	[___ In. Loc]	Ag	Rg		Ag	Aff	{Pat / Ref}
Transitivity-affecting processes															
Causative	___**		___**				___				___			___	
Benefactive	___		___			A Ag	U Aff	0.0 Pat	S.Set In.Loc	A Ag	U Aff	0.0 Rg		___	
Reflexive	A Ag-Aff	U ({Loc / Time})	A Ag-Aff	U ∅	0.0 ({Pat / tu})	A Ag-Pat	U ∅	0.0 [[Loc / tu] ___]	S.Set [___ In. Loc]		___			___	
Reciprocal	A Ag-Aff	U ?	A Ag-Aff	U ∅	0.0 (Pat)	A Ag-Pat	U ∅	0.0 [Loc ___]	S.Set [___ In. Loc]		___		A Ag-Aff	U ∅	0.0 Pat

** A causative form of predicates of case frames 8 and 9 may occur only with a reflexive construction.

The features of transitivity which were summarised 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 the next section and features of transitivity associated with the case frames are discussed in the following section.

3.5.2.2.2 Causative, benefactive, reflexive and reciprocal processes

Valency change and the grammatical roles of the causee and affectee

The causative process increases transitivity generally by 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, patient, or one of the experiencer roles).

Synthetic causativisation is restricted to 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. 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 Alamblak, viz., the serial verb construction. This point is taken up in section 3.5.2.2.5 where case frames of serial constructions are discussed.

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 4-place verbs from 3-place locatives but not from basic 3-place verbs. Example 351(a) illustrates a derived 3-place benefactive and example (b) is an ungrammatical causative construction with the same verb.

351(a). Subj. | Inner Obj. | Out. Obj.

yima -r yimat -r krɨy -t tat-hay -më -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). Subj. | In. Obj. | Out. Obj.

*yima -r yimat -r krɨy -t {hay / ha / ka} -tat-më -r -r

person-3SM *friend*-3SM *chicken*-3SF CAUS-*hit*-R.PST-3SM-3SM

**A man caused a friend to hit a chicken.*

The benefactive can derive a 4-place predicate from a 3-place locative predicate as in example 352(a), but not from a simple 3-place predicate (example (b)).

352(a). Subj. In.Obj. Out. Obj. Out. Obj.

na yima -r yemrë-m nëngay-t këmbri -hay -më -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.

(b). Subj. In.Obj. Out.Obj. Out.Obj.

*na yifem -r yën -r gëbrërna-{hay / nho}-më -an-r hëhrampa-m
1S *father*-3SM *child*-3SM *rub* - BEN -R.PST-1S-3SM *medicine*-3PL
**I rubbed a child (with) medicine for the benefit of his father.*

Causatives cannot derive 4-place predicates from 3-place predicates either, e.g.

(c). Subj. In.Obj. Out.Obj. Out.Obj.

*na yifem -r yën -r {hay / ha / ka}-gëbrërna-më -an-r hëhrampa-m
1S *father*-3SM *child*-3SM CAUS-*rub* -R.PST-1S-3SM *medicine*-3PL
**I caused father to rub the child (with) medicine.*

The restrictions in both cases (causative and benefactive forms) are not syntactically based (e.g. constraints on syntactic doubling).

Syntactic doubling of outer objects is allowed in example 352(a). Doubling of outer objects also occurs with simple 3-place verbs in non-derived form, with certain restrictions, e.g.

353. Subj. In. Obj. Out.Obj. Out.Obj. Ins.

na yën -r wura-t hëhrampa-m rmëntha-e gëbrërna-më -an-r
1S *child*-3SM *leg* -3SF *medicine*-3PL *cloth* -INS *rub* -R.PST-1S-3SM
I rubbed medicine (on) the leg (of) a child with a cloth.

The restrictions are semantic; neither allows doubling of agents or benefactees in the same clause. There is no syntactic doubling in the ungrammatical example 351(b) but there are two agents, the man and his friend. Similarly, example 352(b) cannot be made grammatical by reducing the syntactic doubling of outer objects as in example 354, since two benefactees (father and child) remain in the clause.

354. Subj. In. Obj. Out. Obj. Ins.

*na yifem -r yën -r gëbrërna-{hay / nho}-më -an-r hëhrampa-e
1S *father*-3SM *child*-3SM *rub* - BEN -R.PST-1S-3SM *medicine*-INS

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 355.

355. Out.Obj.

Subj. (Ag) (Pat-For) In. Obj.

yima -r mɨy -t team -f foh -tat-më -r -f
person-3SM *tree*-3SF *coconut.palms*-3D *fell-hit*-R.PST-3SM-3D
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.

356.

Subj.(Ag)	Out.Obj.(Pat)		A U	In.Obj.(Aff)
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 reduced 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 357.

357(a). Uctr

Subj.(Exp-REF)	Out.Obj.(Ref)		A
na	tukia	fëhtas	-a
1S	E/R.PRON	*start.at*-1S	

I started at myself.

(b).

Subj.(Ag-Aff)		A
na	fuk	-a
1S	*bathe*-1S	

I bathed.

(c).

Subj.(Exp-Ref)			A
na	tukia	hïti-më	-a
1S	E/R.PRON	*see* -R.PST-1S	

I saw myself.

(d).

Subj.(Ag-Ref)			A
na	tukia	was	-a
1S	E/R.PRON	*pierce*-1S	

I speared myself.

(e).

Subj.(Ag-Aff)					A
na	tukia	hëhrampa-m	rmëntha-e	gëbrërnay-a	
1S	E/R.PRON	*medicine*-3PL	*cloth* -INS	*rub*	-1S

I rubbed medicine (on) myself with a cloth.

Reciprocals

Reciprocals structurally parallel the intransitive-like reflexive with only one (non-singular) participant marked on the verb (i.e. no undergoer person marker on the verb). The clause as a whole, however, retains its transitive form with at least two nuclear NP's. Morphologically, then, the reciprocal verb parallels the detransitivising reflexive; semantically, however, there is an augmentation rather than a loss of transitivity, since there is a

two-way transfer of activity (cf. p.160 for examples of reciprocals).

We will now briefly look at each case frame in Table 101 to illustrate other features of transitivity.

3.5.2.2.3 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 causativisation 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; 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 causativ-ised (a feature of low transitivity), whereby the actor is now the causer of the state which has 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 ones and two. The undergoer is affected by the state of the first participant. Example 341 is repeated here as 358.

358.

RP(Aff)	(For)		A	U
na	rahoy-t	korhëy-w	-t	-a
1S	*post* -3SF	*heavy* -IMPF-3SF		-1S

The post is heavy for me.

The fact that the undergoer in 358 manifests an affective role is substantiated by the fact that a causative form is not allowed if it adds another participant in the affective role, thus doubling affective roles. For example, sentence 359(a) is ungrammatical; without the second affected participant the causative form would be grammatical (example (b)).

359(a).

	O.Obj.(Aff)	In.Obj.(Aff)	
*bu -r	na	rahoy-t	wih -korhëy-w -r -t
rain-3SM	1S	*post* -3SF	*rain-heavy* -IMPF-3SM-3SF

(b).

	In.Obj.(Aff)		U
bu -r	rahoy-t	wih -korhëy-w -r	-t
rain-3SM	*post* -3SF	*rain-heavy* -IMPF-3SM-3SF	

The rain is raining (causing) the post (to be) heavy.

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 characterises case-frame-three predicates. This is another feature which makes these predicates more transitive than those of case frames one and two.

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 (uncontrolled 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 causativised. At best the actor NP (uncontrolled 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 343). 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 causativisation 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 causativisable predicates. This is so because no participants are added by causativisation, a feature which is unique to this class of predicates. The causativisation 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 343, repeated here as example 360.

360.

Subj.(Uctr Exp)	In.Obj.(Ref)		U
na	nandëm-r	fëhtas	-an-r
1S	*snake* -3SM	*start.at*-1S-3SM	
I started at the snake.			

361.

Subj.(Ag)	(Uctr Exp)		A
nandëm-r	na	hay -fëhtas	-r -a
snake -3SM	1S	D.CAUS-*start.at*-3SM-1S	
The snake caused me to start. (= The snake startled me.)			

Predicates of case-frame five (i.e. uncontrolled experiencer verbs) are similar to controlled experiencer verbs (case-frame two) in terms of the semantic roles involved. They differ, however, in how they are affected by causativisation. Following causativisation, a controlled experiencer verb (e.g. 'laugh') retains the experiencer role as subject, whereas the uncontrolled experiencer verb (e.g. 'be startled') encodes the experiencer role in undergoer function as inner object. Compare the clauses in example 362.

362(a).

Subj.(Ctr Exp)				A
yima -r	met -t	ha	-ningay-më	-r -t
person-3SM	*woman*-3SF	D.CAUS	-*laugh*	-R.PST-3SM-3SF
A man laughed at a woman.				

(b).

In.Obj.(Uctr Exp)			U
met -t	yima -r	hay -fëhtas	-më -t -r
woman-3SF	*person*-3SM	D.CAUS-*start.at*-R.PST-3SF-3SM	
A woman startled a man.			

Both predicate types are unique in the way they are causativised. Predicate types one, three, and four and reflexive forms of eight and ten add a participant in *actor* function when causativised. The uncontrolled experiencers reorient the predication without adding a participant. The controlled experiencers add a participant, but in the *undergoer* rather than the actor function. (For this reason, class-two predicates are termed 'controlled experiencers', since they are encoded as controlling actors in causative constructions.)[110] The experiencer role remains in the actor function with the features of performer of the action who exerts control over the action.[111] 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 characterise 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 causativised but may have reflexive or reciprocal forms. According to our list of semantic 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 typically an affected object toward which the action is projected.

Predicates of *case-frame eight* (e.g. 'bathe') are clearly transitive with some intransitive features. That is, the reflexive construction occurs without the emphatic/reflexive pronoun tu which typically occurs in reflexive constructions of other predicate types. Secondly, the undergoer function, which is not employed in other reflexive constructions, may host locative or temporal roles with the reflexive use of the verb. Only the least transitive predicate types (case-frames one and two) have the potential to host orientation roles as nuclear participants. Because of this feature, the reflexive forms of these predicates are analysed as being as basic as their transitive forms, hence the label 'reflexive action-process verbs'. Examples in 363 illustrate the reflexive form with an orientation role manifested in the periphery (a) and in the nucleus of the clause (b).

363(a).

Subj.(Ag-Aff)						A
na	buj	-t	-n	fuk	-më	-a
1S	*water.hole*-3SF	-S.SET		*bathe*-R.PST		-1S

I bathed (myself) in a water hole.

(b).

Subj.(Ag-Aff)	In. Obj. (Loc)			A	U
na	buj	-t	fuk -më	-an	-t
1S	*water.hole*-3SF		*bathe*-R.PST	-1S	-3SF

I bathed (in) a water hole.

The high probability of these verbs being in a reflexive form is one reason that a second participant (locative or temporal reference) may manifest the undergoer function without much chance of ambiguity (interpreting the undergoer as either an orientation or a participant role).

Predicates of *case-frame nine* (e.g. 'rub') are similar to reflexive verbs of case-frame eight in that they host an affective role and thus cannot take a benefactive form.

Case-frame nine differs from case-frame eight in certain ways as well. For example, the transitivity factor is higher 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 ten* (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 occur as inner object (undergoer function) thus superseding a patient role, which is higher on the role hierarchy for selecting the undergoer function; the patient then 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 (1980).

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 349. An animate location in the affective role indicates affectedness; in a locational role unaffectedness is implied, as illustrated in example 364.

364(a).

			In.Obj.(Pat)		S.Setting(Sur.Loc)				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-3PL	

A man put oil on my wife. (Implication: the oil did not affect her.)

(b).

		In.Obj.(Loc-Aff)		O.Obj.(Pat)				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 eleven* (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 in Table 101. The reason for this placement is the combination of having three nuclear participants and the constraint against deriving a reflexive form.

Although Table 101 does not exhaust all of the verb types in Alamblak, it does illustrate the range of transitivity among Alamblak 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.

3.5.2.2.4 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 Alamblak 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 nine (e.g. 'rub') may select inalienable possessions as undergoers or objects (in a patient role).[112]

The case frames of basic classes one and three thus modified by the presence of an inalienable possession have the form:

$$[\ \underline{\quad}\ \frac{A}{For}\ \ \frac{U}{Pat}\ ].$$

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 102: Inalienable possession clause pattern

RP NP (Patient)	Act (Force)	Predicate
(NP)	NP	v.stem + A (Force) ± U (Pat)
--	NP: (Poss.ph + n.root)	v.stem + A (Force) ± U (Pat)
(NP)	—	n.root + v.root + A (Pat) [+ poss'd]

The cases of inalienable possessions incorporated into the verb stem (row four of Table 102) have been discussed in 3.3.1.3.2. The other patterns in Table 102 are illustrated in example 365.

365(a).

Act(Force)	A
tha -t	gënngtay-t
skin-3SF	*cold* -3SF

(Someone's) skin was cold.

365(b).

RP NP(Pat)	Act(For)		A	U
(yën -r)	tha -t	gënngtay-t		-r
child-3SM	*skin*-3SF	*cold*		-3SF-3SM

{*A child* / *He*} *was cold from (his) skin.*

(c).

Act (Force)		A
yënrho	tha -t	gënngtay-t
child's skin-3SF		*cold* -3SF

A child's skin was cold.

(d).

Act (Force)		A	U
yënrho	tha -t	gënngtay-t	-r
child's skin-3SF		*cold*	-3SF-3SM

A child was cold from his skin.

The pattern of verbal cross-referencing exemplified in example 365(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 365 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 365(b) and (d) with 366(a) and (b).

366(a).

RP NP	Act(For)		A	U
*yima -r	yën -t	gënngtay-t		-r
person-3SM	*child*-3SF	*cold*		-3SF-3SM

(b).

Subj.(Pat)		A	U
yimarho yën -t	gënngtay-t		-{ø / *r}
man's	*child*-3SF *cold*		-3SF-*3SM

{*A man's child was cold.* / **A man was cold from his child.*}

When the basic case-frame three (e.g. 'heavy') includes an inalienable possession manifesting the actor function, the case frame assumes the following configuration:

$$[\ \underline{\quad}\ \frac{A}{For}\ \ \frac{U}{Pat}\ ]$$

This modified frame contrasts a patient role with the affective role of the basic case frame viz.

$$[\ \underline{\quad}\ \frac{A}{For}\ \ \frac{U}{Aff}\ ].$$

The semantic contrast is illustrated in example 367. The predicate in 367(a) has the basic case frame as it appears in Table 101. The case frame of the predicate in (b) has been modified for inalienable possession.

367(a).

RP NP(Aff)	Act(For)		A	U
na	rahoy-t	korhëy-wë	-t	-a
1S	*post* -3SF	*heavy* -IMPF-3SF-1S		

The post is heavy for me.

(b).

RP NP(Pat)	Act(For)		A	U
na	wura-t	korhëy-wë	-t	-a
1S	*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 367(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 [___ $\frac{\text{A}}{\text{For}}$ $\frac{\text{U}}{\text{Aff}}$] case frame (cf. Table 101). The causative is permissible because it does not add a second affective role participant, e.g.

368.

Act(For-Causer)			A	
wura-t	he	-korhë-më	-t	-a
leg -3SF	D.CAUS-*heavy*-R.PST-3SF-1S			

(My) leg made me (feel) heavy.

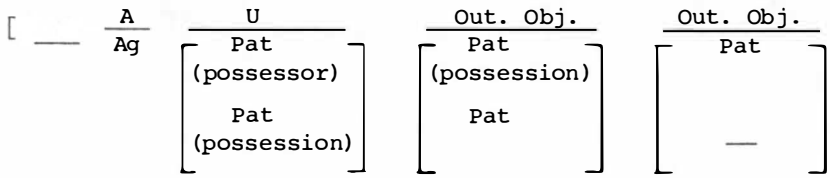
Case-frames five (e.g. 'be startled') and six (e.g. 'see'), when manifesting an inalienable possession, are modified to the following configuration:

$$\left[\text{___} \ \frac{\text{A}}{\text{Exp}} \quad \frac{\text{U}}{\left[\begin{array}{c}\text{Ref}\\ \text{(possessor)}\end{array}\right] \left[\begin{array}{c}\text{Ref}\\ \text{(possession)}\end{array}\right]} \quad \frac{\text{Out. Obj.}}{\left[\begin{array}{c}\text{Ref}\\ \text{(possession)}\end{array}\right] \left[\begin{array}{c}\text{---}\end{array}\right]} \right]$$

Case-frame seven (e.g. 'pierce') is similarly modified to the following:

$$\left[\text{___} \ \frac{\text{A}}{\text{Ag}} \quad \frac{\text{U}}{\left[\begin{array}{c}\{\substack{\text{Ref}\\ \text{Pat}}\}\\ \text{(possessor)}\end{array}\right] \left[\begin{array}{c}\{\substack{\text{Ref}\\ \text{Pat}}\}\\ \text{(possession)}\end{array}\right]} \quad \frac{\text{Out. Obj.}}{\left[\begin{array}{c}\{\substack{\text{Ref}\\ \text{Pat}}\}\\ \text{(possession)}\end{array}\right] \left[\begin{array}{c}\text{---}\end{array}\right]} \right]$$

Case-frame nine (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 102. Primarily, the possessor participant may be coreferenced by the undergoer marker on the verb whether or not it is manifested as an independent constituent NP of the clause. If it is not so manifested, the item possessed may be coreferenced as undergoer.

369(a). O.Obj.(Ref:possession) A U

na yën - r -ho wura-t fëhtas -an- r
1S *child*- 3SM -GEN *foot*-3SF *start.at*-1S- 3SM
I was startled at a child (because of his) foot.

(b).

In.Obj.(Pat:possessor) O.Obj. U

na yën -r wura-t fufr-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 gëbrërnay-an-r
1S *child*-3SM *foot*-3SF *medicine*-3PL *rub* -1S-3SM
I rubbed medicine (on) the foot (of) a child.

Example 369(a) contrasts with cases involving alienable possessions, e.g. example 370. 'Child' cannot be coreferenced as undergoer in example 370(b) as it is in example 369(a).

370(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.

371.

Subj.(Ag) In.Obj.(Pat) S.Set(S.Loc) A U

na yën -r wura-t -n fufr-an-r
1S *child*-3SM *foot*-3SF-S.SET *cut* -1S-3SM
I cut a child on the foot.

3.5.2.2.5 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.

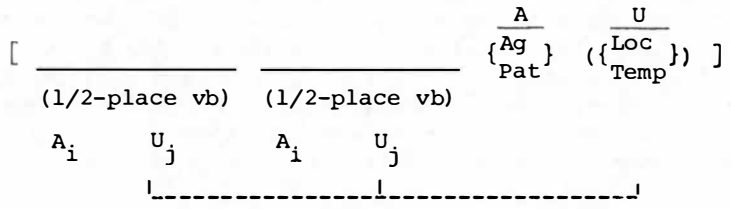
Seven basic case frames are presented here which vary according to the combinations of verb types and patterns of coreferentiality of the participants of the two verbs. The basic governing factor of these constructions is that the complex has one case frame as a whole; one of the actors of the predicates 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 causes a certain 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 between idiolects 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 summarised on Table 101.

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.

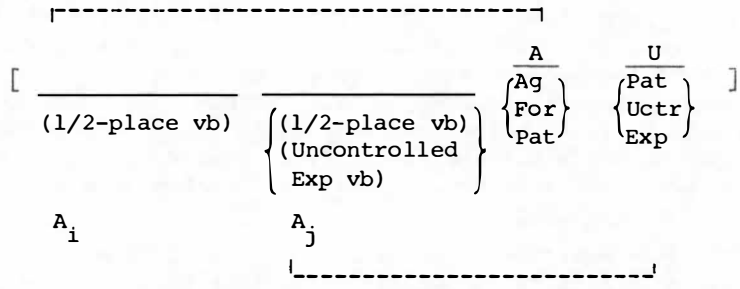
372.

Subj(Pat)			A U	In.Obj.
yën -r	hoe	-toweh-r	-t	nanho kuñ -t
child-3SM	*sleep-dream*-3SM-3SF			*my house*-3SF

A child slept (and) dreamt in my house.

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 or 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 3.3.1.3.1.3).

373(a).

Subj.(For)	In.Obj.(Pat)			A U
yën -r	met -t	hoe	-hip	-r -t
child-3SM	*woman*-3SF	*sleep-perspire*-3SM-3SF		

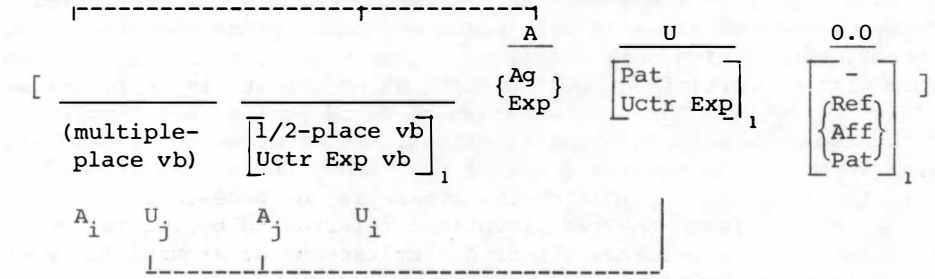
A child slept (and) a woman perspired.
(= A child slept in such a way as to cause a woman to perspire.)

(b).

Subj.(Ag)	In.Obj.(Uctr Exp)		A 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 or uncontrolled experiencer verb root. With the 1/2-place verb root the undergoer of the first root is coreferential with the actor of the second. With the uncontrolled experiencer root the actors of each root are coreferential with the undergoers of the other root. 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 374(c) and (d)).

374(a).

In.Obj.(Pat)		A U
yawy-r	tat-noh-an-r	
dog -3SM	*hit-die*-1S-3SM	

I hit a dog (and) (he) died.

(b).

Subj.(Ag)	In.Cbj.(Aff-Exp)		A U	
yën -r	m+mem -t	hay -fëhtas	-r -t	nandëm-r
child-3SM	*mother*-3SF	*give-start.at*-3SM-3SF		*snake* -3SM

The boy gave (his) mother a snake, startling her.

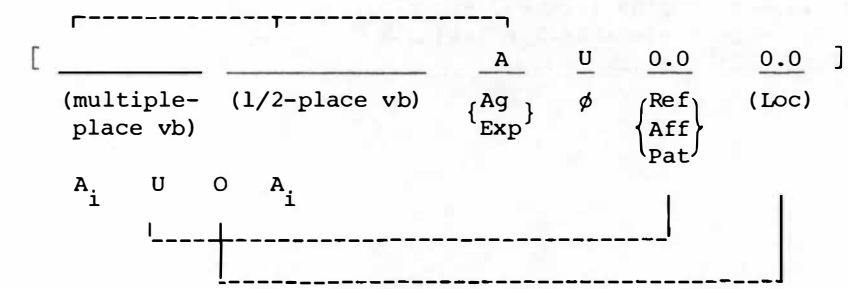
(c).

Subj.(Ag)	In.Obj.(Pat-Ag)	A U
*na	yawy-r	tat-fakrmay -an-r
1S	*dog* -3SM	*hit-run.away*-1S-3SM

(d).

Subj.(Ag)	In.Obj.(Pat-Ctr Exp)	
*na	yën -r	tat-nur-an-r
1S	*child*-3SM	*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 doubling of agents will not occur, there being only one agent. Case frame D exhibits a detransitivised 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 other words, the undergoer of the first verb root is not the actor of the second as in case frame C. With that restriction goes the implication that there is not necessarily any cause-effect relationship between the two situations referred to by the two verb roots. The construction simply indicates either a simultaneous or sequential relationship between the two situations.[113]

375(a).

Subj.(Ag)	O.Obj.(Loc)	O.Obj.(Pat)		A
nëm	doh -t	wuska -m	mi -këmbray -ri	-nëm
1PL	*canoe*-3SF	*things*-3PL	ELEV-*put.into-go*.N.PST	-1PL

We filled (the) canoe (with) things (and) went.

(b).

Subj.(Ag-Ctr Exp)	O.Obj.(Pat)		A
yën -r	mɨmem -t	tat-nur-më	-r
child-3SM	*mother*-3SF	*hit-cry*-R.PST	-3SM

A child hit (his) mother (and) cried.

Case frame E

[			A	U	0.0	]
(1/2-place vb)	(multiple-place vb)		{Ag / Pat}	{Loc / Ref / Aff / Pat}	(Pat)	
A_i	A_i	U				

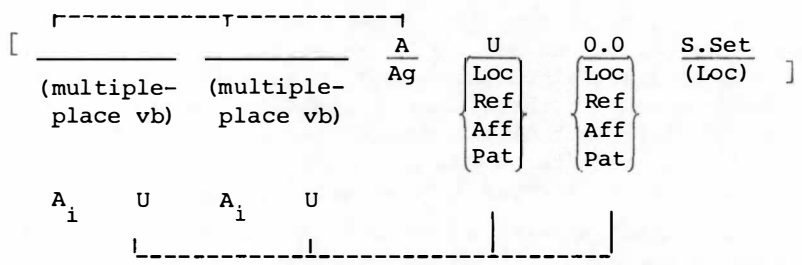
Case frame E combines a 1/2-place verb root with a 2- or 3-place verb, with the actors of the two roots being coreferential.

376.

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 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 F (or G). 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.

377(a).

Subj.(Ag)	In.Obj.(Pat)		A	U	
met -t	rit -m	tandhi-hɨtay-t	-m	kuñ	-t -n
woman-3SF	*insect*-3PL	*roast -put*	-3SF-3PL	*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	mɨy	-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 suspend processing (SP) 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	
mɨy -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	mɨy -t	muh -hambray	-an-t		
insect-3PL-SP	*tree*-3SF	*climb-search.for*-1S-3SF			

I climbed a tree (and) looked for insects.

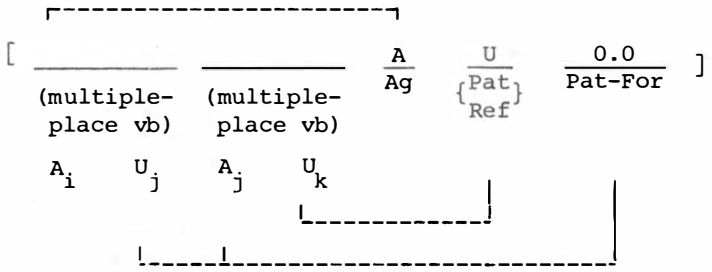
The -e suffix on 'tree' in example (c) and on 'insects' in example (d), is the same form as the second coordinate conjunction marker in a coordinate NP. It clearly does not signal a coordinate NP here, however, (cf. the description of the coordinate NP construction in 3.2.4.3). The -e suffix occurs on 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 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 dependent clause which occurs in several sentence types (cf. 3.6.2).[114]

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 377(d)). Thus, the SP is not functioning as a topicaliser; if anything, the undergoer marker on the verb is the topicaliser in these cases. The pragmatic marker (-e) in Alamblak 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 G



Case frame G is similar to frame C firstly in that the two actors are not coreferential. Secondly, 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 as in frame C, but by restricting 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 F, only optionally occurs with the inner or 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 serialised verb. Thus the SP morpheme is still a functional aid for the hearer.

378.

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.

3.5.2.3 Semantico-syntactic properties of subjects

The grammatical categories of subject and inner object are generally coherent syntactic constructs in Alamblak syntax. There are a few constructions, however, which require these constructs to be analysed into more primitive features.

For the majority of clauses, a subject NP can be identified by several semantic and syntactic features. The basic syntactic features of Alamblak subjects, given in section 3.4.3, are as follows: subject NP's are

(1) unmarked for case,
(2) coreferenced by the first verbal pronominal suffix,
(3) the left-most of the nuclear NP's in the clause.

These features are illustrated by examples in 322 in section 3.4.

The basic semantic feature of subjects, as in most languages, is that:

(4) the subject is the agent or causer of the clause, if there is one.

Thus, the causer in the causative clause in 379 exhibits the syntactic properties of subjects.

379.

Subj.			A
wifër-t	kuñ -m	kasuh	-t -m

wind -3SF *house*-3PL DP.CAUS.*fall*-3SF-3PL

The wind caused the houses to fall.

To these features may be added the characteristics of controlling or undergoing the syntactic process of

(5) switch reference and
(6) relativisation.

3.5.2.3.1 Inalienable possession

In clauses with two NP's, one of which is inalienably possessed by the other, the above mentioned subject properties are divided between the two phrases. The referentially prominent possessor NP manifests two subject properties and the inalienably possessed causing actor manifests two subject properties as indicated in Table 103.

Table 103: Inalienable subject properties

	Possessor NP	Possessed NP
Left-most	✓	
Verbal cross-reference		✓
Switch reference control		✓
Relativisation	✓	

The first two properties are illustrated by example 380; a change in word order is not permitted.

380(a).

Possessor NP Possessed NP A

yima -r ñungram-t kɨna-më -t -r
person-3SM *throat* -3SF *dry* -R.PST-3SF-3SM
The man is dry {*(in)* / *(because of)*} *(his) throat. (= The man is thirsty.)*

(b).

Possessed NP A

*ñungram-t yima -r kɨna-më -t -r
throat -3SF *person*-3SM *dry*--R.PST-3SF-3SM

The left-most NP in 380(a) exhibits a second subject property, that of relativisation (cf. 381(a)). The second NP in 380(a) cannot be relativised on (381(b)).

381(a). G.REL Clause

ɨnd tirt famë yima -r hɨti-an-r
DEM *hand ache*.R.PST *person*-3SM *see* -1S-3SM
I saw the man (whose) hand ached.

(b). G.REL Clause

*ɨnd yimar famë tir -t hɨti-an-r
DEM *man ached hand*-3SF *see* -1S-3SM
**I saw the hand (which) ached (on) the man.*

The second NP in 380(a) not only exhibits the subject property of controlling the first verbal cross reference marker, it also controls switch reference as in 382.

382.

Possessed NP A A

yima -r ñungram-t kɨna-më -t -[t / 3SF] -r bupam fut -[r / 3SM]
person-3SM *throat* -3SF *dry* -R.PST-DA-[3SF] -3SM *water drink*-[3SM]
A man was thirsty (because of his) throat [DIFFERENT ACTOR] *(and) he drank water.*

In this example the first predicate is marked with the different actor marker -t indicating a switch of actors from 'throat' in the first clause to 'he' (= (= the same man) in the second.

Other off norm word order occurs in clauses where a referentially prominent (RP) NP usually occurs left-most in preference to the less prominent actor NP.

383(a).

RP			A	U
yima -m	bu -r	wih -r	-m	
person-3PL	*rain*-3SM	*rain*-3SM-3PL		
The rain rained (on) the people.				

(b).

RP			A	U
yima -m	doh -t	korhëy-w	-t	-m
person-3PL	*canoe*-3SF	*heavy* -IMPF-3SF-3PL		
The canoe is heavy (for) the men.				

3.5.2.3.2 Comitative constructions

Clauses with comitatives involve a perspective distinction between an unmarked NP and the comitative-marked NP. A role distinction is not made between them for the purposes of verb agreement, however. The construction as a whole, therefore, exhibits the subject property of controlling the first verbal cross-reference marker. In other ways, however, the two or more NP's related by a comitative do not function as a single constituent in the clause.

The coordinate conjunction joins NP's in a single clause constituent as in example 384.

384.

Subj (Ag)				A
yima -r -i	yën -r	yi-më	-f	
person-3SM-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 coordinate conjunction does, at least in some cases.

385.

Act			A
yën -r	yima -r -pnë	yi-më	-f
child-3SM	*person*-3SM-COM	*go*-R.PST-3D	
A boy went with a man.			

As with example 384, the conjoined NP's in 385 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 384 and 385, however. For example, Ross's (1967) Co-ordinate Structure Constraint (CSC) is applicable to sentence 384 but not to sentence 385. Neither of the NP's in sentence 384 may be relativised on (cf. example 386(a)), whereas the unmarked NP in example 385 may be (cf. example 386(b)).

386(a). G.REL Clause

*yima -r -i yi-më yën -r
person-3SM-CONJ *go*-R.PST *child*-3SM
**The boy (who) and a man went.*

(b). G.REL Clause

yima -r -pnë yi-më yën -r
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 385 cannot be relativised on (cf. example 387).

387. G.REL Clause

*yën -r yi-më yima -r -pnë
child-3SM *go*-R.PST *person*-3SM-COM
The man with (whom) a boy went.

The fact that, of examples 384 and 385, only the unmarked NP in 385 is relativisable suggests that the unmarked NP in 385 is singled out as being somehow in perspective.[115]

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 as the coordinate 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.[116]

The comitative has been analysed, then, as a conjoining function which joins NP's which are equivalent in their general role but not equivalent in every way. The coordinate conjunction joins NP's for which a distinction in roles is *not* made from the speaker's perspective. Both constructions share the subject property of controlling verb agreement, but are distinguished otherwise.

3.6 Sentences: coordination and subordination

3.6.0 Introduction

The notion of sentence in Alamblak 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. note 121) and/or interclausal conjunctions are suggested as the cohesive features which are definitive of Alamblak 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 semantically[117] and the structural differences seem to be little more than gradations of cohesiveness and size. The paragraph, for example, is characterised as generally "a looser and larger package than the sentence." (Longacre 1976:276). Such a gradation is clearly evident in Alamblak, 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.[118]

In this section Alamblak 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).

3.6.1 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.

3.6.1.1 Logical relations

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.

3.6.1.1.1 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).

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*

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 388(a) and (b).

388(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.

3.6.1.1.2 Alternation

Propositions may be alternatives. The opposition may either be binary (with two possible alternatives) or multiple.

3.6.1.1.3 Temporal

Temporal relationships between predications is an important feature of human language. The two basic relationships here are *simultaneity* and *succession*.

3.6.1.1.4 Implication

Implicational relationships between predications involve logical rather than temporal organisation, 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. whereever, 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 realisation 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 characterises 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 3.3.1.3.1.1).

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 Alamblak 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 sections 3.6.2.1.2.5 and 3.6.2.1.2.6).

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."

3.6.1.1.5 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.

3.6.1.1.6 Illustration

Illustration is an elaborative relationship utilising 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.

3.6.1.1.7. 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.

3.6.1.1.8 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*).

3.6.1.1.9 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 1976:149-150). The antithetical sentence in English, as in Alamblak, 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 (section 3.3), where only commonly associated predicates are allowed to combine.

The logical relations suggested by Longacre and discussed above form the basis for describing one of the semantic systems in operation within sentences in Alamblak. 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 organisation of sentences.

3.6.1.2 Discourse factors

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 Czec, 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 centres 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 centres the focus of attention on the conclusion. For example, certain premises of conditional, contra-expectancy, and contrafactual sentences, viz. non-final and general dependent clauses, are subordinated with the same 'presupposition' form of the verb that subordinates general relative clauses (cf. section 3.3.1.1.3). 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.

3.6.1.3 Thesis

In our discussion of Alamblak sentences, we will attempt to demonstrate a general relationship between the cohesiveness between clauses and some of these features of communicative dynamism. Specifically, there is a tendency for the degree of syntactic cohesion between clauses to be correlated with the degree of imbalance in the distribution of CD among the clauses. A loose construction (with low cohesion) tends to present new information in both clauses. A construction with high cohesion between the clauses tends to present new information in one clause and old or backgrounded new information in the other.

Old or backgrounded information may be characterised as semantically subordinated but cannot be correlated with the syntactic subordination of unilateral dependency between clauses.[119] Highly cohesive sentences may involve either unilateral dependence (syntactically subordinate) or mutual dependence (syntactically coordinate) between constituent clauses. These correlations of syntactic and semantic features of sentences are portrayed in the typology of sentences in Table 105.

3.6.2 Syntax of sentences

Taking the semantic and syntactic features discussed in the last section, Alamblak sentences may be organised into a system as represented in Table 105. The notions of coordination and subordination are syntactic notions reflecting different types of structural nexus between clauses. The semantic features which are employed include new information and semantically subordinated old information and backgrounded information, as well as logical relationships between clauses which are reflected in the labels given to various sentence types.

The organisation 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."[120]

Antithetical and conditional sentences can be classified under both coordination 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 (new + new)	High cohesion (new + old/background)
Types of nexus:		
I. Coordination		
A. Independent clauses (x + y)	Antithetical S	
B. Mutually dependent clauses (x ↔ y)	Contrast S	Conditional S
	Comparative S	Contra-expectancy S
		Contrafactual S
		Simile S
II. Subordination (x ← y)	Paraphrase S	Tightly conjoined S
	Quotation S	Reason S
	Alternative question S	
	Loosely conjoined S	

The syntactic notions of coordination and subordination, which have been employed in Table 105, are defined here according to their use in describing Alamblak sentences.

> Coordination: "A coordination 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. Coordinated independent clauses both present new information and are joined with 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;[121] 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 morphologically non-isolable as a minimal sentence. These subordination 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.

Thompson and Longacre (f/c, p.2) have characterised 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 matrix clause than subordinate clauses are to the predicate of the independent clause. Other differences between subordinate and embedded clauses are discussed in section 3.7.

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 an indication 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 characterised by the intonational pattern that is found on subordinate clauses (cf. the discussion of the purpose clause in section 3.7.2.2) 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 (f/c, 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.271).

We now proceed to describe and illustrate the basic sentence constructions in Alamblak. 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 study and probably of negligible value.

Table 106: Degrees of sentence cohesion

High cohesion.... ....Low cohesion

Sentences	Dependent clauses	Subordinating intonation	Morphologically non-isolable as minimal S	Clitic	Conjunction	Non-finite	Mutual dependency	No actor marker	Presupposition marker
Antithetical S		±		±	+				
Contrast S	Non-final CL	+					+		?
Comparative S	Comparison CL	+					+		
Paraphrase S	Negation CL	+			±				
Quotation S	Quotation CL	+	+						
Loosely Conjoined S	Non-final CL	+							±
	G. DEP CL	+	+	+					+
Alternative Question S	Non-final CL	+			+				?
Reason S	Reas. Sub. CL	+	+	+		?			
Tightly Conj. S	Truncated CL	+	+			+		+	
Conditional S	Non-final CL	+			+		±		?
	G. DEP CL	+	+	+	+				?
	Sub. IMP/HOR CL	+	+	+	+	+	+		
Contrafactual S	Non-final CL	+			+		+		?
	Sub. Hort. CL	+	+	+	+		+		
	Irrealis CL	+	+	±		+	+		
Contra-expectancy S	Sub. Hort. CL	+	+	+	+	+	+		
	Simultaneous CL	+	+	+		+		+	
	Sequence CL	+	+	+		+		+	
Simile S	Infinitive COMP	+		+		+	+	+	
	Purpose CL		+	+		+		+	

3.6.2.1 Coordination

Sentences with coordinately related clauses relate two or more independent or mutually dependent clauses.

3.6.2.1.1 Coordinate sentence with independent clauses: 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	(Non-) falling	(Non-) falling	Falling
exponents	Indep. clause	(to) nhai *but no*	Indep. clause
	Quotation S (and most other S types)	to tfit *but then*	
	Non-final clause		
	G. Dependent 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 recognisably contrasting with the expected predicate.

389. $Base_1$: Independent clause
yifi-a yima -r -ho hɨti-t;[122]
go. -1S *person*-3SM-GEN *see* -INF

Link: to nhai;
but no

$Base_2$: fiñji hɨti-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 390(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 390(b)).

390(a). $Base_1$: *yifi -a këmbru-hajoh-t;
go.I.PST-1S *possum-hunt* -INF

Link: to nhai;
but no

$Base_2$: kish -t rim -krupiskiek-t.
torch-3SF ELEV-*extinguish*-3SF

(b). (Loosely conjoined sentence)

Dependent base: yifi -a këmbru-hajoh-t -e,
go.I.PST-1S *possum-hunt* -INF-DEP

Independent base: kish -t rim -krupiskiek-t
torch-3SF ELEV-*extinguish*-3SF
I went to hunt possum, and the torch went out.

Constituent clauses of the antithetical sentence

The following variations of the basic pattern shown in Table 107 are of a subordinating rather than a coordinating type of pattern. A quotation sentence (cf. Table 121) 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 non-final clause and the general dependent clause, may manifest the first base.

Non-final clause

Structurally, the non-final 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 3.7.4), and the presupposition marker (cf. section 3.3.1.1.3), 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, 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 non-final clause. If they in fact cannot occur, it is a further indication of the backgrounded role of the non-final subordinate clause within most sentences.

The non-final clause cannot manifest the presupposition marker when occurring in the antithetical sentence. Furthermore, it presents new information in the antithetical sentence.

Table 108: VP of the non-final clause			
Functions	+ Nucleus	± Switch reference	+ Termination
intonation			level/rising
exponents	VP Base	-t 'different actor'	Act Und Elev? (PNG mkrs) (ELEV mkrs?)

An example of the non-final clause manifesting base one of the antithetical sentence is given in example 391 below. Other examples of the non-final clause are given in examples 392, 306, 311, and elsewhere in this chapter.

391. $Base_1$: Non-final clause

bro ñiñt yënr hoi -t -t -r,
big centipede child sting-DA-3SF-3SM

Link: to nhai;
but no

$Base_2$: 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 dependent clause

The general dependent 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/ - Dependent VP				
Functions	+ Nucleus	± Switch reference	+ Actor term	+ Link
intonation				rising-step-down
exponents	declarative verb base (Non)-POSSD verb base (v. Table 42) Copular VP (v. Table 73)	-t 'different actor'	PNG	-ne *and, then*

The different actor marker cooccurs only with a declarative verb base.

The coordinating (linking) clitic -ne has the following allomorphs:

$$/\text{-ne}/ \rightarrow \begin{cases} \text{-ne} \sim \text{-n} \sim \text{-e} / \{{}^{r}_{m}\} \\ \text{-ne} \sim \text{-n} \quad / \text{ elsewhere} \end{cases}$$

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 coordinating 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 non-final clause (with the undergoer marker manifested) or as a general dependent clause (with the undergoer not manifested, displaced, so to speak, by the linking clitic) are not clear at this stage of research.

When the verbal (non)-possessed base manifests the predicate, the general dependent clause expresses simultaneity with or without an implication of efficient cause. This usage is discussed in section 3.7.2.1 together with the discussion of the simultaneous clause.

Coordinate sentences with mutually dependent clauses

The clause constituents of contrast sentences, comparative sentences, summary sentences, conditional sentences, contrafactual sentences, contra-expectancy sentences, and simile sentences are coordinately related. Both clauses in these sentence types are marked in some way as dependent on each other and thus are mutually dependent. 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.

Low cohesiveness

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.

3.6.2.1.2 Contrast sentence

Table 110

Functions	+ $Base_1$	+ $Base_2$
intonation	rising	falling
exponents	non-final clause	contrastive negation clause

Logical relations: contrast of one term and the predicate by antonymity or negation.[123]

392. $Base_1$: yima -r ginaf-m ki -hanit-wë -r -m,
person-3SM *grub* -3PL *eat*-PROG -IMPF-3SM-3PL

$Base_2$: yën -r nhai; fiñji ye -kah -r.
child-3SM *no* NEG *eat*-PR.IRR-3SM
The man is eating grubs, (but) not the child; he is not eating (them).

Constituents clauses of the contrast sentence

$Base_1$ of the contrast sentence is manifested by a non-final clause (cf. Table 108). $Base_2$ 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 86) which is usually manifested by one of the negation particles other than nhai *no*.

The contrastive 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. This 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	nhai *no*	(Other exponents as for independent finite clauses)

For an example of a contrastive negation clause, see $Base_2$ of example 392. The topic NP is in contrast with a term in the clause of $Base_1$ 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 'subject' NP. For example, a topic 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.

3.6.2.1.3 Comparative sentence

Table 112		
Functions	+ Base	
exponents	Comparison clause	Comparison clause

Logical relations: Two clauses compare terms by contrasting a feature which differs in degree between the two.[124]

393. $Base_1$: $Base_2$:

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 393 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 sentence such as example 393 above. Alamblak seems to be a clear example of a Papuan New Guinean language with contrasting sentence structures for comparison and contrast (cf. Table 110). In other words, the sentence in example 393 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 the example above 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 this example which specify non-conventional standards of comparison, and an absolute statement ('he is big') or contrast ('she is big but he is 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 coordination 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 393.

High cohesiveness

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 sentence discussed above.

3.6.2.1.4 Conditional sentence

The first 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 coordinate sentence, although it embraces both unilateral and mutal dependency relationships between its constituent clauses.

Table 114: Conditional sentence			
Functions	+ $Base_1$	± Link	+ $Base_2$
intonation	non-falling	non-falling	falling
exponents	Non-final CL G. dependent CL Subordinate imperative/ hortative CL	[rising] awi *wait* [level] b+t(n) *then* [level] be *enough, finish, okay*	Independent CL Irrealis CL [negative]

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 of the stated premise by his use of the sentence type.[125]

The link b+t(n) *then* has been observed postposed to $Base_2$. In that position it carries a low-level pitch following the falling pitch over the second clause. As the above Table 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 irrealis clause.

394. $Base_1$: G. DEP CL.

rër nayay-w -r -e,
he come -IMPF-3SM-DEP

Link $Base_2$: Indep.CL.

b+t 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 394 without its optional conjunction would be just such a case. A tense change from present to future in the two clauses in this example, however, restricts the semantic interpretation to one of hypotheticality and thus contrasts with a conjoined sentence.

395. $Base_1$: Subordinate IMP/HOR CL

a -naya-kah-t -t,
HORT-*come*-IRR-DA-3SF

$Base_2$: Independent CL

tu-f+nah-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 non-final clause and dependent clause have been discussed previously (cf. Tables 108 and 109). The other subordinate clause constituent of $Base_1$ is the subordinate imperative/hortative clause which may be analysed as a subtype of either the non-final clause or the general dependent clause with a present tense form of the irrealis imperative or hortative verb manifesting the predicate.

Table 115: Present irrealis imperative/hortative VP base

Functions	+ $Mode_1$	± Elev.	+ Head	+ $Mode_2$
exponents	wa- 'imperative' a- 'hortative'	(Table 68 p.150)	verb stem	-kah 'present irrealis'

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.

396. $Base_1$: Sub. IMP/HOR CL

wa -i -kah-n -n kuñ -ko
IMPER-*go*-IRR-2S-DEP *house*-AL

$Base_2$: Indep. Imper. CL

wa -hoay -twa -ϕ
IMPER-*sleep*-FUT.IRR.IMP/HOR-2S
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 395). Examples like 395 are certainly unusual compared to the more common cases (e.g. 396) where the two clauses have the same illocutionary force; examples like 395 have been 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.

397. *wa -i -kah-n[126]
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 3.6.1). In Thompson and Longacre's terms (f/c, 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 395 must be translated in English by a coordinate 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. 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 yet to be discussed, viz., the irrealis clause, which may manifest the second base of the sentence. The irrealis clause is similar to a negative declarative clause with several differences. The negative particle in a negative irrealis clause is only optional and it is always the so-called 'negative of uncertainty' (afë);[127] secondly, the verb manifests two irrealis markers for the contingent

form or the present irrealis marker with a complex serial form for the conditional form. In a positive irrealis clause a negative particle does not occur and the verb manifests one irrealis marker. The verb of an irrealis clause is described in Table 55 in section 3.3.1.1 where various readings of the table are discussed.

By combining the negative particle of uncertainty (afë) and the future irrealis (-t) with a past irrealis (-r) and past tense in the verb, 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 can be analysed as an extended use of the immediate past tense as a perfect tense aspect marker.[128]

The negative hypothetical conditional form of an irrealis verb occurs with a formulaic serialised stem co-occurring with the present tense irrealis marker. The serialised stem is composed of a form of the (non)-possessed modifier (Table 42) plus one of two auxiliary verb roots roh *sitting* or yi *go*.

An example of a conditional sentence manifesting an irrealis clause in the apodosis clause is given in example 398. The negative hypothetical form of the irrealis predicate occurring in the protasis clause is illustrated in example 399(d) in the discussion of the contrafactual sentence.

398. $Base_1$: Non-final CL

tefi maruham hay -më -m -r,
small.amount money give-R.PST-3PL-3SM

Link $Base_2$: (negative) Irrealis CL

be, bëk wuskam afë wikna-r -fë -t -r -m..
finish plenty things uncer.neg *buy* -IRR-I.PST-IRR-3SM-3PL
If they gave him a small amount of money, well, he would not have bought plenty of things.

3.6.2.1.5 Contrafactual sentence

Table 116: Contrafactual sentence

Function	+ $Base_1$	± Link	+ $Base_2$
intonation	non-falling	non-falling	falling
exponent	subordinate HORT CL Non-final CL Irrealis CL [negative]	awi *wait* bɨt(n) *then*	Irrealis CL

Logical relations: Contrafactuality.[129]

The Alamblak contrafactual sentence has the following features: $Base_1$ expresses the contrafactual hypothetical premise and $Base_2$ 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 conclusion was to have been contingent upon the premise. The subordinate imperative/hortative clause (in $Base_1$) 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 399(c), had the actor not hit her ($Base_1$) (he did not, not hit her however, but he should have not hit her), then he would have not gone to goal ($Base_1$) (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 $Base_1$ are non-finite, with the precise tense of the sentence indicated by the clause manifesting $Base_2$.

399(a). $Base_1$: (positive) Subord. Hortative CL

a -i -kah-n -n
HORT-*go*-IRR-2S-DEP

Link $Base_2$: (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).

(b). $Base_1$: (positive) Subord. Hortative CL

a -yakrme -kah-f -n,
HORT-*run.away*-IRR-3D-DEP

Link $Base_2$: (negative) Irrealis CL

awi, afë was -r -më -t -m -f.
wait uncer.neg *pierce*-IRR-R.PST-IRR-3PL-3D
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). $Base_1$: (negative) Subord. Hortative CL

a -tat-dohra -roh -kah-r -t,
HORT-*hit*-NONPOSSD-*sitting*-IRR-3SM-3SF

$Base_2$: (negative) Irrealis CL

afë yi-r -më -t -r kalabus
uncer.neg *go*-IRR-R.PST-IRR-3SM *goal*
He should not have hit her (and) if he had not, he would not have gone to gaol [I did not want him to].

399(d). Base$_1$: (negative) Irrealis CL

hoay -dohra -roh -kah-an-n,
sleep- NONPOSSD *-sitting-*IRR-1S-DEP

Link Base$_2$: (positive) Irrealis CL

awi, wañ -r -më -an-n.
*wait hear-*IRR-R.PST-1S-2S
If I had not been sleeping, well, I would have heard you.

(e). Base$_1$: positive non-final CL

rip -kor yi-më -nëm,
*swamp-*AD *go-*R.PST-1PL

Base$_2$: positive Irrealis CL

nandëmm was -r -më -m -nëm
*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 non-final clause (cf. Table 108), irrealis clause (conditional and contingency), and the subordinate hortative clause.

The subordinate hortative clause conveys the notions of obligation, contrafactuality and hypotheticality without the illocutionary force of a command. It contrasts with the subordinate imperative/hortative clause which lacks the notion of contrafactuality but conveys the force of a command (cf. section 3.3.1.1). The predicate of the subordinate hortative clause exhibits a hortative form of either the positive or negative irrealis verb. See sentences 399(a), (b), and (c) for examples of the subordinate hortative clause.

Table 117: Form-meaning correlations of the contrafactual sentence

	Contrafactual hypothetical conditional premise		Contrafactual hypothetical contingent 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	negative Irrealis CL
With neutral implication	Non-final CL	neg. Irrealis		

Summarising the variants of the contrafactual sentence in Table 117 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 non-final 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 non-final 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.[130]

3.6.2.1.6 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 118: Contra-expectancy sentence

Functions	+ $Base_1$	+ Link	+ $Base_2$
intonation	non-falling	non-falling	falling
exponents	Subordinate hortative clause Non-final CL (?)	to iñji *but/yet thus*	(negative, contingent) Irrealis clause Irrealis clause

Logical relation: Frustrated contrafactuality.[131]

$Base_1$ expresses the contrafactual hypothetical premise, and $Base_2$ expresses the unexpected hypothetical conclusion, which may or may not convey contrafactuality. Like an antithetical sentence, there is a blockage (by $Base_2$) of an expected implication which is expressed in $Base_1$. Contrary to the contrafactual sentence, the subordinate hortative clause in $Base_1$ of the contra-expectancy sentence does not convey obligation, and there is no implication as to the desirability or otherwise, had the contrafactual premise actually eventuated.

400. Base : (negative) Subordinate Hortative CL

a -beb-ta -dohra -yi -kah-n -n
HORT-*bad*-PROC- NONPOSSD -AUX-IRR-2S-DEP

Link Base : (negative) Irrealis CL

to iñji muh -r -fë -t -n -t
yet thus climb-IRR-I.PST-FUT.IRR-2S-3SF
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 400 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 blockage of that expectancy is that he would not have climbed it even then. Sentence 401 may be analysed in a similar way.

401. Base : (negative) Subordinate Hortative CL

m+y -e a -tat-dohra -roh-kah -n -t,
tree-INST HORT *hit*- NONPOSSD -AUX-PR.IRR-2S-3SF

Link Base : Irrealis CL

to iñji nayay-r -më -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 goal.*

[If, for example, other acts were committed which were serious enough on their own to call for a goal sentence.]

In sentence 401, $Base_1$ expresses a contrafactual statement; $Base_2$ is not contrafactual but merely a hypothetical statement which is conditional upon the premise in $Base_1$.

Clause constituents of the contra-expectancy sentence

The constituents of the contra-expectancy sentence have been discussed previously. See discussions of the irrealis clause, and subordinate hortative clause on pp.271, 272 and 274.

3.6.2.1.7 Simile sentence

Table 119: Simile sentence

Functions	+ $Base_1$	+ $Base_2$
intonation	rising	falling
exponents	Infinitive complement clause	Resemblance clause

Logical relation: Illustration by simile.[132]

402. $Base_1$: nandëmrho that tirt yakti-kfët,
snake's skin hand touch-INF

$Base_2$: iñji gënngtay-w -t wurat
like.that cold -IMPF-3SF *foot*
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.)

Clause constituents of the simile sentence

The two constituents of the simile sentence are the infinitive complement ($Base_1$) and the resemblance clause ($Base_2$).

The infinitive complement includes a non-finite 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 discussion of the purpose clause in section 3.7.2.2.

The resemblance clause is composed of a relator or link iñji *thus, like that* plus an independent clause (cf. in example 402).

3.6.2.2 Subordination

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 isolable as a minimal sentence; and the alternative question sentence exhibits a conjunction. The loosely conjoined sentence is somewhat more cohesive with a non-final clause or a general dependent clause manifesting the dependent base.

3.6.2.2.1 Paraphrase sentence

Table 120: Paraphrase sentence

Functions	(+ Dependent base)^R	± Link	+ Independent base
intonation	rising	level	falling
exponents	Negation clause	be *enough/ finish*	Positive independent clause

Logical relations: Negated antonym, negated extremes.[133]

The dependent base may be repeated for encoding the relationship of negated extremes.

403.

Negation CL			Negation CL		
nhai	masat	hingnakahr,	nhai	rhofrakahr,	
no	*much*	*not.work*	*no*	*not.be.idle*	

Link		
be	nhofjë	hingnaywr.
just	*carefully*	*he.works*

No, he does not work vigorously, no, he is not idle, he just works carefully.

Without repeating the dependent base, the relationship of negated antonym is encoded by the sentence.

404. Negation CL

nhai fëhr tufnahrfër, nungwat tufnahr.
no pig he.did.not.shoot, bird shot.he
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, a subtype of a negative declarative clause (cf. Table 86) digresses in minor ways from the general pattern of a negative clause. 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.

Thus, the negation clause 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 non-final 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 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.

3.6.2.2.2 Quotation sentence

Table 121: Quotation sentence

Functions	+ Quote formula	+ Quotation
intonation	level	falling
exponents	Quotation clause	Independent clause

Logical relations: Direct quotation, contrary-to-fact obligation.[134]

405. Quotation clause

yimar famur na ɨndkor kita-a
man said/thought 1S *there go* -1S
A man said, "I am going there."

Example 406 illustrates contrary-to-fact obligation interpretations of the quotation sentence.

406(a). Quotation CL

may-r -më -r
say-IRR-R.PST-3SM

fëhm a -tu -fɨnah -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 -më -r fëhm tu -fɨnah -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 406 above. It is described as manifesting the rhetorical predicate function of the contrafactual hortative in section 3.4.1.3. 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. Functionally the quotation clause is anticipatory to the main assertion to be made by the speaker.

3.6.2.2.3 Alternative question sentence

Table 122: Alternative question sentence

Functions	+ Dependent base	+ Link	+ Independent base
intonation	rising	low level	falling
exponents	Non-final CL	Independent clause whose predicate is manifested by a form of may *say/think* (n)o *or*	Independent clause

Logical relations: Alternation with two alternatives.

The alternative question is a neutral question with respect to the speaker's attitude. That is, the speaker does not have any expectancy as to the correct answer, although he limits the range of possible answers by providing alternatives for the hearer to choose from.

407. Dep. Base / Link / Indep.Base

bi fnoh-r, kamuk -a[135] të-r
already died-3SM PR.*say/think*-1S *is*-3SM
Has he died, I think he remains? (= Has he died or is he still alive?)

The non-final 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 2.5), but the non-final clause in an alternative question sentence is not marked intonationally as a yes/no interrogative. The non-final clause is marked intonationally as a yes/no interrogative. The non-final 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.

3.6.2.2.4 Loosely conjoined sentence

Table 123: Loosely conjoined sentence

Functions	(+ Dependent base)^{R}	+ Independent base
intonation	non-falling	falling
exponents	General dependent clause Non-final clause	Independent clause

Logical relations: Coupling which may or may not imply temporal relationships, and may or may not imply efficient cause by the subordinate clause.

The subordinate non-final clause may manifest a very low degree of cohesion with the independent clause; example 408 manifests a non-final clause which is subordinated only by a 'suspensive' level intonational pattern.

408. Non-final clause / Non-final clause

womr bi kawhanitr, womr dambur kitr, womr tɨkwanohwër.
another already he.is.walking, another spider going 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 non-final clause manifests the presupposition marker and the switch reference marker. (Example 409(b) can be interpreted with an efficient cause relationship.)

409(a). Non-final clause

yimam nakum n+ti -w -a -t -m -m,
men sago.palms pulverise-IMPF-PRSUP-DA-3PL-3PL

metm nëf -wë -m -m.
women strain-IMPF-3PL-3PL
Men pulverise sago palms, (Different actor) *women strain (the pulp).*

(b). Non-final clause

marr tay -w -a -t -r, yikyi -w -a.
sun shine-IMPF-PRSUP-DA-3SM *perspire*-IMPF-1S
The sun is shining, (Different actor) *I am perspiring./Because the sun is shining I am perspiring.*

The general dependent 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 dependent clause has as much internal cohesion as the sentences in example 409.

410. General dependent CL

nëngorf ha -tonit-w -a -r -ne, kuñm hingnaywër.
trucks CAUS *-run* -IMPF-PRSUP-3SM-G.DEP *houses builds.he*
He runs (two) trucks, (and) builds houses.

The general dependent clause can be interpreted as the reason in an efficient cause relationship as was the case with the non-final clause in example 409(b). The bases may occur in either order producing a reason-result of result-reason relationship.

411(a). G. DEP. Clause

faw -ñifha -nayay-r -n, hoe -krif -wë -r
walk-until.daybreak-come -3SM-G.DEP *sleep-until.afternoon*-IMPF-3SM
(Since) he walked coming until daybreak, he is sleeping until the afternoon.

(b). G. Dep. Clause

hoekrifwër ñinga-krkot -w -a -r -n
he.is.sleeping.until.afternoon eye -sleepy-IMPF-PRSUP-3SM-G.DEP
He is sleeping until the afternoon (because) he is sleepy.

Example 412 further illustrates coupling which implies sequential temporal relationship between the clauses.

412. G. DEP. CL | G. DEP. CL | G. DEP. CL.

hoe -r -n siña-r -n, yaw -ñimbho-hani-r -n, më -f+nah -r.
sleep-3SM-G.DEP *rise*-3SM-G.DEP *walk-piece* -PROG-3SM-G.DEP ELEV-*arrive*-3SM
He slept, arose, walked a short distance, (and) arrived.

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 section, 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.

3.6.2.2.5 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 124: Tightly conjoined sentence		
Functions	(+ Dependent base)^{R}	+ Independent base
intonation	rising	falling
exponents	Truncated clause	Indpendent clause

Logical relation: Coupling which may or may not imply temporal relationships.

The truncated clause manifests a high degree of cohesion with the independent clause. Some of its features of dependency are as follows: it is not isolable 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.

413. 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.

3.6.2.2.6 Reason sentence

The reason sentence itself fulfills an important role in the cohesiveness of discourse. The subordinate clause of the reason sentence manifests a proverb which recapitulates the previous sentence as the reason for the predication of the main clause.

Table 125: Reason sentence		
Functions	+ Recapitulation base	+ Independent base
intonation	rising	falling
exponents	Reason subordinate clause	Independent clause

Logical relation: Efficient cause.

In example 414, the reason sentence follows a sentence as it would in discourse.

414. yira buga-m fa -më -r -m.
fish all -3PL *eat*-R.PST-3SM-3PL

Reason sentence

ɨnd-net-r -n, yati -fa -më -r.
DEM-*do* -3SM-G.DEP *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 subtype of the general dependent 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 linking marker -ne.

Syntactically, the subordinate clause is dependent upon the main clause by its subordinated form. Semantically only old information, known from the immediate linguistic context, can be encoded by the subordinate clause.

3.6.2.3 Complementation

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 with little recourse to the notion of complementation in the analysis; one type of dependent clause, the infinitive clause and a subtype of it, the purpose clause, may be best described as bearing a complementation relationship to the main predicate.

The infinitive clause functions dependently as a complement clause or independently as a paragraph or discourse topic sentence or expressing a customary event or state. In all of its functions time deixis is not important and often participants are either incidental or backgrounded vis-a-vis the event or state itself. Accordingly, the predicate of the infinitive clause lacks tense and actor or undergoer markers. It comprises only a stem with optional prefixes plus the infinitive suffix.

Table 126: Infinitive verb

Functions	± Elevational	+ Nucleus	+ Infinitive
exponents	Elevational prefixes (v. Table 71)	One or more juxtaposed verb stems	-kfët ∿ -t

The dependent infinitive clause functions as a complement of the main verb in the matrix clause as in example 415. The infinitive verb signals the complement function without the aid of complementiser particles or other subordinators. As with other embedded clauses clausal arguments may be incorporated into the verb or genitivised (cf. sections 3.3.1.3 and 3.7.1 for discussions of these processes).

415(a). INF CL

na iñji wañf+nahmëant barirpat rhu -haku -t.
1S *thus hear.arrive*.R.Past.1S.3SF *lake.only remain-always*-INF
Thus, I have heard it up to now (that) it is always only a lake.

(b). INF CL

nanho wurat K+fiwt Yamkop+ntho nayay-Kfët, nayayrhwa.
1S.GEN *foot speak*.PRES.3SF *Amongabi*.GEN *come* -INF *come*.FUT.1S
(If/when) (my) foot speaks [=when/if I like] to come to Amongabi, I will come.

In lieu of a systematic analysis of Alamblak discourses in this study, the other functions of the infinitive clause will be illustrated here. The infinitive form is used as a paragraph or discourse topic sentence in all types of discourse genre as in example 416.

416. INF CL

në bi yënetenë, be. Nanho Yifam+mampnë tëh -Kfët.
1D *now child*.POSS.COP.1D *enough*. 1S.GEN *parents.with stand*-INF
(When) we have children now, that's all. (Then) staying [=living] with my parents!

The infinitive clause is frequently employed in procedural and hortative discourse genres where tense reference is incidental and often the participants are secondary to the event being described. Use of the infinitive is one strategy for reducing the prominence of the actor, much as the passive does in other languages (example 417(b)).

417(a). INF CL

në nënga maru yaknihatë, yifam+mamn hëmbre -Kfët yohrn.
1D *plate money get.go*.SA *parents*.EMP *put.into*-INF *string.bag.in*
We, having gotten and taken the money plate, (our) PARENTS put (it) into a string bag.

(b). INF CL

Tas-hatë ye -Kfët.
cut-SA *eat*-INF
Having cut up the meat, (it) is eaten.

These uses of the infinitive in independent clauses employ the same form as in its dependent complement use. Pragmatically, the work it does of focussing on a tenseless event or state is accomplished well in both cases.

The purpose clause, a subtype of the infinitive clause, also functions as a complement in a matrix clause. It is discussed along with adverbial clauses in the next section.

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 3.2.3.2.6) manifesting the nuclear 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 3.2.3.2.4) or a direct quotation (cf. the Quotation sentence in section 3.6.2.2) or a juxtaposed but intonationally integrated copulative clause (cf. section 3.3.2.1) may be employed in Alamblak for 'that' complements in English, e.g.,

418(a). G. Rel. CL

na kuñt hingnamë mɨrëkɨfef-t wanuya
1S *house built talk* -3SF *I.heard*
I heard the talk (that) I built a house.

(b). COP CL

yimar wañ -ak -më -r -r bi bɨrbë-e -r.
man hear-get-R.PST-3SM-3SM *now near* -COP-3SM
The man heard him now he is near-by.
(= The man heard him (that) he (was) near-by.)

3.7 More on dependent clauses

3.7.0 Introduction

Dependent clauses have been described in section 3.6.2 under coordination 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.

3.7.1 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' intonational pattern (cf. section 2.4) which potentially includes a pause following the clause. Structural features of subordinate clauses and three embedded clauses and the degrees of cohesion which characterise 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 127.

Table 127: Embedded clauses

	Non-finite	No pronominal suffixes	Noun incorporation	Genitivised 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 non-finite verb form, without actor and undergoer pronominal markers (cf. 3.3.1.2.1), 2) potentially incorporate nouns into the verb (cf. 3.3.1.3), 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 genitivised nuclear NP's, and they tend to neither exhibit non-finite 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 127 are the most sentential. The relative clauses (including the (non)-possessed modifier) and nominal clauses are described in section 3.2. The others, i.e. the adverbial clauses, are described in the next section.

The phenomenon of noun incorporation is discussed in section 3.3.1.3, for both independent and embedded clauses. The pattern of genitivisation is basically that the nuclear noun phrase which is least accessible to verbal cross-referencing in independent clauses is most accessible to genitivisation 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 genitivised 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 3.2.3.2.6.2. 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 genitivised objects is disallowed.

3.7.2 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.[136] 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.

3.7.2.1 Time clauses

Two types of time clauses are distinguished by verbal affixes, the simultaneous clause and the sequence clause. One form of the general dependent 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 in Table 127. According to the parameters of Table 127, 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.

3.7.2.1.1 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 (non-future), -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 419 with different tenses.

419(a). SIM CL

nikë hingna-më -hat, h+ti-më -an-kë
you.PL *work* -R.PST-SIM *see* -R.PST-1S-2PL
While you (pl) *worked, I saw you* (pl).

419(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 dependent clause

A general dependent clause, whose predicate manifests a verbal (non)-possessed modifier (v. Table 42), 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.

420(a). G. DEP Clause

(Non)-Possd Mod.

hoay -et -r -ne, kuñt fiñji fknay-r -fë -a
sleep-POSSD-3SM-G.DEP *house not enter*-IRR-I.PST-1S
While/since he (was) sleeping, I did not enter the house.

(b). G. DEP Clause

nërwit gur -hayn-et -r -n, yarim-finah -më -m yimam.
slit.gong beat-PROG-POSSD-3SM-G.DEP ELEV -*arrive*-R.PST-3PL *men*
While he was beating the drum, the men arrived.

3.7.2.1.2 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).[137]

421(a). SEQ Clause

rëm kmi -thëf -m yi-hatë, këmbrur skunët-më -m -r.
they place-resident-3PL *go*-SA *possum singe* -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, tas -hayn-më -m -r.
singe -all -SA *leaves*-INS *scrape*-SA *carve(meat)*-PROG-R.PST-3PL-3SM
After having thoroughly singed (him), after having scraped (him) with leaves, they carved him up.

3.7.2.2 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 Alamblak clause types (cf. Tables 106 and 127). Phonologically, it is the only subordinate clause in Table 106 which manifests neither a clause-final nor a non-final 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.

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 3.6.1 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 128: Purpose clause

Functions	(Peripheral functions)	+/± (+ Subj.	± In.Obj.	± Out.Obj.	+ Predicate
exponents	(cf. clause periphery in sect.3.4)	[NP / NP / NP / { GEN. NP }]	[NP / GEN. NP / GEN. NP / { NP }]	[GEN. NP / NP base / ---]	infinitive verb

Notes: The +/± notation indicates that a nuclear NP either must occur, or may not occur. More explicity, a one-place verb does not require a nuclear NP to be manifested but a multi-place verb does.

The purpose clause is a subtype of the infinitive complement (section 3.6.2.3). On the one hand, the predicates of the two constructions are the same; they are non-finite 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 tend to assume different forms. The nuclear participants of the infinitive complement do not as often assume a genitive form as they do in the purpose clause.

The more general infinitive clause may function syntactically either

independently or dependently. Its semantic functions are more general than the specific purpose clause.

422(a). PUR CL
yuk -t kit-w -a.
bathe-INF *go* -IMPF-1S
I am going to bathe.

(b). PUR CL
kit-w-a yuk-t.
I am going to bathe.

(c). PUR CL
yënr fëh-r -ho hɨti-kɨfët nayay-wë -r
child pig-3SM-GEN *see* -INF *come* -IMPF-3SM
A child is coming to see a pig.

(d). wa -ha -ni -twa -n -m
IMPER-CAUS-*go* -FUT.IRR.IMP/HOR-2S-3PL

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.

3.7.3 Role structure of dependent clauses

Embedded clauses (Table 127), 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.

3.7.3.1 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 (example 423), 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.

423(a). SEQ Clause
(Actor)
fëh-t yima -r hɨti-hatë yi-më -t
pig-3SF *person*-3SM *see* -SA *go*-R.PST-3SF
The pig, having seen the man, (same actor) *went.*
(= Having seen the man, the pig went.)

(b). SEQ Clause
(Actor)
*yima -r fëh-t hɨti-hatë yi-më -t
person-3SM *pig*-3SF *see* -SA *go*-R.PST-3SF

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.

3.7.3.2 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 3.7.1. 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 3.5.2.1) is the most likely to take the genitive form in dependent clauses. The occurrences of genitive noun phrases are summarised for the purpose relative clause, nominal clause and purpose clause in Tables 41 and 49 (in section 3.2), and in Table 128, 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 example of the purpose relative clause, nominal clause and purpose clause for illustrations of genitive NP's in dependent clauses.

3.7.3.3 Coreference between clauses

3.7.3.3.1 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.

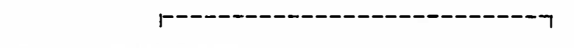
Rules of covert coreference are governed by the predicates involved in both dependent and independent clauses. Some predicates imply a change of actors unless otherwise indicated by overt reference; others imply identical actors; and others are neutral.

Predicates which anticipate a change of actors

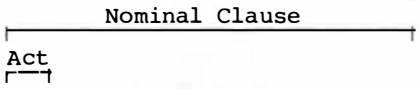
Some main clause predicates are undergoer-focal; they anticipate the undergoer to be the actor of the dependent predicate unless the actor is specified otherwise. These predicates include multi-place verbs such as the following:

t+ndaw	*beg*
t+tiwën	*ask*
kfë-rafë	*forbid*
kfë-yfifak	*entice*

424(a).

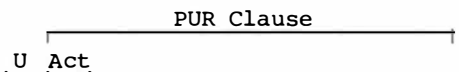


yifaemr yënm kfë -yfifak-rah-r -m
father children talk-entice-FUT-3SM-3PL



ø skur -r -ho yi-nef-t.
ø *school*-3SM-GEN *go*-NOM-3SF
Father will entice the children; (about) (their) going (to) school.

(b).



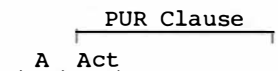
yënt t+ndaw-t -a ø wuska -r-oh wikna-kfët
child demand-3SF-1S ø *things*-3-GEN.PL *buy* -INF
A child demanded me (for me) to buy things.

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:

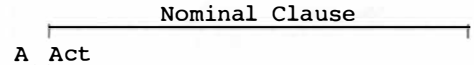
duka	*think/remember*
wofn	*want*
yi	*go*
muh	*climb*
tuf+nah	*shoot*

425(a).



kuñ -ko wa -i -kë ø hoay -kfët
house-AL IMPER *go*-2PL ø *sleep*-INF
You (pl) *go to a house (for you* pl*) to sleep.*

(b).



duka -nëhtay -a ø yemrë-r-oh ye -nef-t
think-deliberate-1S ø *meat* -3-GEN.PL *eat*-NOM-3SF
I debated (about) (my) eating the meat.

Predicates which do not anticipate the actor

Other predicates are neutral with respect to the anticipation of the actor of the dependent clause.

426(a). SIM Clause

metm wañ -an-m ∅ nuat ye -hat
women hear-1S-3PL ∅ *food eat*-SIM
I heard women while ({I was / they were}) eating food.

(b). PUR Clause

yimam wa -hañ -n -m ∅ maruha-r-oh yak-kfët
men IMPER-*take*-2S-3PL ∅ *money* -3-GEN.PL *get*-INF
Take the men (for {them / you}) to get money.

In these cases with neutral predicates, the identification of actor of the dependent clause is dependent upon the context and/or combinations of sentence elements, e.g.

427. dbëhna yimam wa -hañ -n -m
sick men IMPER-*take*-2S-3PL

PUR Clause

∅ hëhram -pa -r-oh yak-kfët
∅ *medicine*-deriv.of-3-GEN.PL *get*-INF
You take the sick men (for them) to get medicine.

3.7.3.3.2 Overt coreference and switch reference

In the last section we have discussed dependent clauses with reduced verbs (i.e. verbs with no actor or undergoer markers). In this section we examine some of the relationships between clauses with fully inflected predicates. The switch-reference system which will be discussed in the final section includes both cases; in one case the dependent verb is fully inflected and in the other it is not.

Overt Coreference

The verbal pronominal suffixes coreference participants which are identifiable either in the linguistic discourse or in the 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 101) 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 the same clause or 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 428(a)) the verbal pronominal suffix cannot coreference it in a subsequent sentence (example 428(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)).

428(a). kmi Yamkopin-ko yi-më -a.
place Amongabi-AL *go*-R.PST-1S
I went to Amongabi village.

(b). A U
*Dbëhna-më -an-t
sick -R.PST-1S-3SF
**I was sick at it*

(c). In.Obj.(Loc) A U
ind kmi -t dbëhna-më -an-t
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.

429(a). SEQ Clause A U
kmi Yamkopin-ko yi-hatë, dbëhna-më -an-t
place Amongabi-AL *go*-SA *sick* -R.PST-1S-3SF
Having gone to Amongabi village, I was sick (at) it.

(b). General Dependent Clause
bro kmi - r 3SM tëh -më -w -a -m -ne,
big place- 3SM *standing*-R.PST-IMPF-PRSUP-3PL-G.DEP

A U
yha yha -m dbëhna-më -w -m - r 3SM
time time-3PL *sick* -R.PST-IMPF-3PL- 3SM
They were remaining (at) the big place, (and) they were being sick continually (at) it.

(c). Non-final Clause A
bro kmi - r yawy-m ri -dbëhna-ak -më -w -a -t -m
big place- 3SM *dog* -3PL ELEV-*sick* -INCH-R.PST-IMPF-PRSUP-DA-3PL

A U
yima-m dbëhna-më -w -m - r 3SM
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 Givon are involved in the verbal pronominal system in Alamblak. The undergoer selection hierarchy (section 3.5.2.1) 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 non-final and general dependent 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 3.5.2.3 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 382 in section 3.5 is repeated here as example 430(a).

430(a).

		Actor (For)				A	U	
yima	-r	nũngram-t	kɨna-më	-t	-	t	-r,	
person-3SM		*throat* -3SF	*dry*	-R.PST-DA-		3SF	-3SM	

		A	
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				A	U	
na	hingna-më	-t	-	a,		mëfha-t	fa	-më	-	t	-a	
1S	*work*	-R.PST-DA-		1S		*head* -3SF	*eat(= ache)*	-R.PST-		3SF	-1S	

I worked (DIFFERENT ACTOR), *(and then) (my) head hurt me.*

NOTES

1. The 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 1 p.16).

2. Although 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 Alamblak area that these two dialects are clearly defined and that only minor differences exist between communalects within these two major dialects. Both dialects were recognised in Dye, Townsend, and Townsend (1968) and they were first given the above names in Bruce (1975).

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

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

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

6. These notions have been discussed recently in conjunction with the notion of subject by Schachter (1977), Foley and Van Valin (1977), Olson (1976), 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 section 3.5.

   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.

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

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

9. See Glover (1974) for a formulation of the semantic hierarchy as applied to Gurung (Nepal). See also Pike (1976) for more recent work on the semantic hierarchy.

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

11. Franklin discusses this question as a controversy which is not new to tagmemics. He cites Merrifield (1967:49ff) and Longacre as tagmemicists who have argued for keeping "much of the information from the lexical hierarchy included in dictionaries, not the grammar" (Franklin (1969:17).

12. Some of the segments on Table 3 are not specified for important features which distinguish major allophones. This is not meant to constitute a claim about the phonetic content of the phoneme in the mind of the speaker. It merely reflects the indeterminacy of the full phonetic specification of certain phonemes abstracted from their linguistic context. For example, peripheral fricatives are unspecified for voicing being manifested phonetically as voiced or voiceless in certain contexts.

    Other segments on Table 3 are not specified for important features in the system where those features are redundant, i.e. not distinctive for those segments. For example, voicelessness is a redundant feature for medial fricatives.

    For the sake or readibility phonetic symbols will be used freely as abbreviations for sets of features.

13. The symbolisation [ˑʊ] indicates a phonetically short vocoid. All instances of [i̯] and [ʊ] are phonetically short and thus will not need to be marked as such in future transcriptions.

14. Peripheral fricatives do not cluster on the surface. This restriction is analysed as a phonotactic constraint requiring vowel epenthesis to separate the fricatives. Following the phonotactic rule the assimilation rule applies, voicing the segments in question. This phenomenon is discussed in section 2.3.2.

15. Thus it is the equivalent of a morphophonemic rule.

16. Alternatively the phenomenon discussed here could be described as an assimilation of a more specified underlying nasal. Such a solution would require an arbitrary choice for the underlying nasal. The rule would have to apply vacuously in one case unless /m/ were chosen as the underlying form. Furthermore, such a solution here would require adding phonotactic constraints elsewhere in the grammar to explain that non-assimilating nasals do not occur preceding these consonants.

17. This formulation essentially postulates an archisegment which is even less specified than the 'phonemes' in the distinctive feature matrix (Table 3) to specify the underlying forms of non-alternating morphemes fitting the structural description of the rule. To avoid distinguishing this Praguean-

type archiphoneme from other archisegments (i.e. unpronounceable underspecified segments) the phonemic symbol /n/ will be used to represent the cases of the underspecified [+ nasal] segment as well as the alveolar nasal segment which is also underspecified but to a lesser degree. The potential ambiguities of this double service of /n/ are resolved in all cases by phonetic transcriptions of the forms involved.

This formulation was chosen to describe the data instead of postulating a more specified underlying nasal in order to catch something of the synchronic state in its diachronic context. Some evidence is given in section 2.1.1.3 for prenasalisation in Alamblak. If the cases described by the NA rule are remnants of prenasalisation, then the results of resegmentation diachronically are better described in terms of a neutralisation through limited distribution rather than by positing a single arbitrary underlying nasal segment. In this case, then, the class of phones represented in the first environment of the rule (non-front, non-nasal, voiced stops) is a natural class which are slower to completely lose the feature of prenasalisation diachronically than are the front, voiced or voiceless and non-front, voiceless stops. The voiceless affricated palatoalveolar stop is the exception to that generalisation.

It may be possible to justify including the voiceless palatoalveolar stop within that generalisation by claiming that it loses prenasalisation slower than other voiceless, non-front stops. It is also possible to remove it from the rule here and account for the phenomenon by another phonological rule where, in the case of palatal assimilation, it could easily motivate positing an underlying /n/ in these cases. Such a solution would require postulating fully abstract forms for non-alternating morphemes however, and thus it has been rejected here.

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

$$\left\{\begin{array}{l} \left|\text{Y}\right|\text{-final roots} \\ /\text{palatoalveolars}/ \\ \quad [\text{ɾ̆Y}] \\ \quad [\text{ɽ̆Y}] \\ \left[\begin{array}{l}\text{morphological} \\ \text{class of} \\ \text{palatoalveolar} \\ \text{hosting roots}\end{array}\right] \end{array}\right\}$$

Furthermore, an even more complicated allophonic statement involving the same environments would be required to derive non-phonemic tap palatoalveolars ([ɾ̆Y] and [ɽ̆Y]).

By dispensing with morphophonemic rules the artificial distinction between palatoalveolar phonemes and palatoalveolar tap 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 also. 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.

19. The derivation could alternatively be described with only one (Y coalescence) rule. The Y Deletion I rule would be necessary anyway, however, as evidenced by example 31(b), therefore it is employed here rather than adding another rule to the description.

20. Correspondences between the Karawari and Kuvenmas dialects of Alamblak suggest that the ay coalescence rule (cf. p.46, ay → [ɛ] / ___ $\{^{C}_{\#\#}\}$) 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 palatoalveolar in the Karawari dialect and [ɛ] plus alveolar in the Kuvenmas dialect. Compare these correspondences taken from Bruce (1975:100).

	English	Karawari	Kuvenmas	Reconstruction
1.	guardian spirits	[na{č, š, s}uŋ'gwaɍ̆m]	[nɛsuŋ'gwaɍ̆m]	*/nay^{t}/$_{s}$yNgwarm/
2.	older brother	[na'jɛ̈m+Ɍ̆]	[nɛ'dɛ̈m+Ɍ̆]	*/naydëmr/
3.	mayfly soup	[nañ'jɛ̈Ɍ̆pam]	[nɛn'dɛ̈ɍ̆bam]	*/nayndër^{p}/$_{b}$am/

21. Bach 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 generalisation of the resulting rules. Full specification of the Alamblak vowel dissimilation rule may not be possible until its historical development is understood. (See also footnote one, Table 10, p.48.)

22. In this example the /a/ which has been raised to [ə] has undergone further modification to [o] by the Tense-Rounding Assimilation rule (p.41).

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

24. cf. section 2.3.2 for a discussion of epenthetic [ɨ].

25. It is possible that this rule had something to do with the origin of the feature of verb conjugations (cf. Table 59) in which the last vowel of the root is diphthongised 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.

    Two exceptions to this rule have been documented. The sequence ea is realised phonetically as one syllable with the low vowel carrying the peak of the syllable (i.e. [^{e}a]); the sequence ue is separated by the epenthetic [y], e.g. /yemuet/ ['yemuyet] *it is (a kind of tree)*.

26. The distinction between the two y-deletion rules is presumably due to different motivations for the rules. While they both conspire to remove yC sequences, the 'y' Deletion I rule is ordered immediately following the Palatal Assimilation rule. The assimilation rule could, in fact, be interpreted as a coalescence rule thus absorbing the y-deletion process. This is essentially the analysis followed in Bruce (1975). The 'y' Deletion I rule is still necessary, however, for cases like example 79(a) where assimilation has not previously occurred. It is suggested here that the y-deletion that occurs in cases like 79(a) may be motivated by the Palatal Assimilation rule which is in fact a coalescence rule. Such a coalescence rule would provide a commonly occurring model for a more specific surface phonotactic constraint than the general constraint against yC since it specifically restricts 'y' plus palatoalveolar sequences. The 'y' Deletion I rule then simply expresses the generalising of the phonotactic constraint which results from the y-alveolar coalescence process. Refer to the discussion on rule ordering (p.47) for details on the relationship between these two deletion rules.

27. It is difficult to motivate this rule phonotactically in a way which is consistent with the other phonotactic rules. This rule modifies an underlying CVC.CVC structure in example 81 to produce CV.CV.VC which is then modified further by a y-epenthesis process finally yielding the surface CV.CV.CVC. Thus, while other rules more directly restrict vowel sequences across syllable boundaries, this one creates a vowel sequence by syllabifying to avoid the wy-sequence. Then the resulting vowel sequence is interrupted by the application of the 'y' Epenthesis rule.

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

29. This rule in its given form will not correctly operate on the data without restrictions on rule ordering. See section 2.1.4 on rule ordering for examples of derivations based on these phonological rules.

30. /hingna/ *work* is a conjugation II root which diphthongises in the immediate past and present tenses (cf. p.144).

31. The Palatal Assimilation and 'y' Deletion I rules are similarly ordered seeming to operate together as a single coalescence rule. Since, however, 'y' deletion occurs in contexts independently of palatal assimilation, 'y' Deletion I must appear as a separate rule (cf. p.44).

32. The terms 'feed' and 'bleed' are taken from Kiparsky (1968). Some rules feed others by creating forms to which those other rules apply; other rules bleed by altering a form to which still other rules would have applied before the alteration took place.

33. Mid-periph diphthongisation (cf. p.55) is included in this step.

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

35. Previously 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/ ∿ /pithay/ (I. PST, PR).

36. Two forms of the remote past tense morpheme më *are* given in example 94. The third form [mᵉ] is given in Appendix A.

37. 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 the 'y' Deletion I and Low-Front Coalescence rules. 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 rules the verb root is completely obscured where it has fused with a juxtaposed phone, or deleted next to a palatal.

38. Pike (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.

39. Kalam (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 (1975:486) 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.

40. The 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).

41. /hi/ *give* is an irregular conjugation I verb. Its allomorphs are described in Table 61.

42. Examples from *Au*, a Sepik language which is unrelated to Alamblak, illustrate the same phenomenon.

    1(a). ˈkʰ-atʰɨn *he-squeeze.off*

    (b). kʰ-atˈn-u kʰ *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.

43. For 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."

44. A 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 126.

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

46. Research 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 1977b: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. section 2). The gloss used in Dixon (1977b '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 3.3.1.2.3) with a more traditional meaning 'the initiation of an action'.

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

48. Other locative constructions, the locative phrase and the locative complex phrase, will be described in section 3.4.3.1 and 3.4.3.3.

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

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

51. k‘ 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.

52. The sound p’ 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 Alamblak).

53. Longacre 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.

54. See 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.

55. The 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.

56. 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.

57. Some derivational affixes, however, seem to completely resist separation from the head noun, e.g.

1(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

58. 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.

59. Noun classification is discussed further in the section on gender on page 97.

60. The term 'pronoun of difference' is taken from Jespersen (1976:179).

61. wura *five* occurs in expressions containing fifteen modulo twenty.

62. A 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 167 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' derived from 'two sick chickens and one dead chicken'.

Such a solution is a reasonable explanation for the number agreement in example 167, 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.

63. Where subject properties are split between NP's of a clause, only the referentially prominent NP may be relativised on; thus inalienably possessed items are not relativisable 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.

64. The noun which is relativised 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 relativised noun may have for each relativisation strategy refer to the function of that noun within the relative clause; its function within the matrix clause is irrelevant for purposes of relativisation.

65. cf. sections 3.4.3 and 3.5.1.3 for a discussion of the roles these functions play in the clause.

66. For example, nëm rëm haymë 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 (a) below is unacceptable whereas a change in word order renders it acceptable in (b).

1(a). G. REL CL
*ɨnd maroham nëm haymë mërhor
DEM *money us gave European*

(b). G. REL CL
ɨnd nëm maroham haymë mërhor
us money
the European (who) gave us money/the European (to whom) we gave money

67. The 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 relativised on.

68. The reader is referred to Bruce (1979:191-196) for a discussion of the structural continuum of close-knit phrase to compound word. The discussion there follows Fries (1970:113) who speaks of "varying degrees of cohesion".

69. Examples in 202 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 yawyr 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.

70. The morpheme -(n)o appears to be a loan from New Guinea Pidgin. Its allomorphic pattern is the same as that for -(n)e and similar to other nasal final morphemes.

71. Zero morphemes will not be included in remaining examples unless they are in focus in the discussion.

72. 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 55).

73. 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 58. 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 58 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 characterise the irrealis form -wat. The form can, in fact, be associated with an imperfective meaning, i.e. either with the habituative 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 habituative or continuative aspects, as in example 215. -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.

74. 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 speakers' point of view in order that he may focus the hearer's attention elsewhere in the utterance.

75. Allomorphs of the future declarative realis marker are -rhw (with IS) and -rah (with other actors). As discussed in note 73 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.109), 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.

76. Other 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 ninge *laugh*, hëmbre *put into* and tone *run*.

77. Fluctuating 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. Part Two p.50ff).

78. The semantic analysis of the person markers is presented in section 3.5.1.3. The notions of actor and undergoer are defined there.

79. Secondarily, 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.

80. The two suffixes indicating 'up' and 'down' also have an extended use of locating a period of time in the future or past, respectively.

81. 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 lexicalisation 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.

82. 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."

83. There 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.

84. The 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.

85. For unconventional or incidental events, verb roots are separated minimally by an adverbial clause subordinating suffix. Refer to the discussion of adverbial clauses in section 3.7.2.

86. 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 3.5.2.2.5.

87. 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.

88. 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".

89. The semantic commonality of adjectives and verbs has long been recognised. While the syntax has neutralised the verb-adjective distinction in constructions like example 262, 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.

90. This condition is necessary for Alamblak, as for other pronominalising 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.

91. Sentence 273 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.

92. See section 3.4.3 for a discussion of the inner object.

93. Other possible readings of the 1/2-place clause include two S.Setting NP's manifested in the periphery (indicating time and location settings), or an inner object cross-referenced in the verb indicating the time setting only if a location setting is not mentioned in the clause. See the discussion of the case frame for verbs typically manifested in predicates of this clause type (3.5.2.2.1) for further restrictions on possible readings.

94. The syntactic and/or semantic constraints governing the choice of having or not having verb agreement is not clearly understood at this time. Factors of animacy or definiteness do not control verb agreement with 2-place clauses, as they do to an extent with 1/2-place clauses (cf. discussion of case frame 1 in section 3.5.2.2.1).

95. 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 study 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 1 below illustrate this.

1(a).

Subj.	In.Obj.
Mariwanr	mett fakmërt
Mariwan	*woman got.he.her*
Mariwan got a woman.	*(= Mariwan took a wife.)*

1(b). In. Obj. Subj.

nanho bro mëndaremt Mariwanr fakmërt
my big sister Mariwan got.he.her
Mariwan married my big sister.

This phenomenon is related to factors of referentiality discussed in section 3.5.2.3. 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 Alamblak word order as well. Example 1(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 2(a).

2(a). Subj. Out. Obj.

Katitho habhi mëndaremr Nanho mëndaremt fakmër
Kathy's little brother my sister got.he
Kathy's little brother married my sister.

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).

2(b). In. Obj. Subj.

nanho mëndaremt Katitho habhir fakmërt
my sister Kathy's small.one got.he.her

The topic of the discourse has been moved to the front of the clause in example (b) and the speaker (Jude) 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.

96. A question noun phrase is defined as a noun phrase with an interrogative root manifesting one of the functions (e.g. inner modifier or nucleus).

97. A single-word answer in agreement with the speaker's preconceived answer would be nhai *no*. This follows the English pattern in contrast to the New Guinea Pidgin pattern which would be yes *yes* meaning, *yes I did not bathe*.

98. In Bruce (1974b) there is an early discussion of voice in Alamblak. The data and analysis have not been altered here. The conclusion as to the best characterisation has changed, however, from 'pseudo-passive' in that article to 'voice-neutral' here as it was in Bruce (1979).

99. 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 section 3.7.

100. 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.

101. The efficient cause role is encoded by the referent marker only when occurring with an inanimate head noun. See the discussion on causative constructions (section 3.3.1.3.1) for a comprehensive discussion of how causatives are expresses in Alamblak.

102. Comrie (1979) 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 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 326 is preferentially assigned to an actor role (comitative) and to other roles only where the context so constrains the selection.

103. 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 affixed to it, even though it has an external surface compatible with the predicate as well.

104. In section 3.5.2.3 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.

105. 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 generalisations. The more generalised three-term role system is useful for other purposes, e.g. Longacre uses such a system in his analysis of the combinations of predications.

106. Saksena (1980) has differentiated affected and unaffected agents also claiming that the case-grammar-type semantic role of agent is not a primitive notion.

107. Clark (1973), Cook (1978), McLendon (1978), Sugita (1973) and Dixon (1977a:273ff) are among recent discussions of transitivity.

108. Example 339 illustrates a general restriction on the inner object. An inner object must be 'crucial to the predication' (cf. the definition of undergoer p.219). 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 emphasise its importance. The common verb roh *sitting* (case frame 1), if unmarked for adverbial aspect will not coreference 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* CONT.*at*-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 3.7.4.2 where constraints on coreference between clauses are discussed.

109. This class commonly exhibits the reflexive form. cf. Table 101 for the modified case frame of the reflexive form.

110. The causative formative is functionally a transitiviser which in the case of controlled experiencer predicates (case-frame two) does not introduce a new causer participant in the clause. The participant which is added by the transitiviser is an undergoer, which is potentially affected by the predicate (e.g. 'laugh') and not a causer.

111. Laughing is considered to be a controllable action in Alamblak society. It is very important, for example, to control laughing when strangers are around who may misinterpret laughing to be associated with themselves.

112. 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.

113. The use of the 'reflexive' form with serial constructions raises the question of its relationship to transitivity as described for simple verbs. It is suggested here that a cause-effect relationship is a basic feature of transitivity whether between participants in a simple clause, or between situations in serial constructions.

114. Tannenhaus 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 constituent clauses 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 in Alamblak.

115. The reader is referred to discussions of the significance of relativisation in Zubin (1976), Foley (1977) and Kuno (1976).

116. The reader is referred to discussions of perspective and speaker empathy in Chafe (1976), Fillmore (1977), Kuno (1976) and Schachter (1977).

117. Note 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."

118. Even if further research motivates higher grammatical levels in Alamblak, a fusion of borders between levels of sentence and paragraph would not be contrary either to a tagmemic theory or to structural systems at other levels in Alamblak syntax.

119. Thompson and Longacre (forthcoming, p.2) do make a correlation between syntactically subordinate clauses and semantic subordination: "a subordinate clause is one which is *presupposed*, in the straight-forward sense that the proposition it contains must be taken as given in order for the main proposition to be used felicitously." Those authors, however, are referring to subordinate clauses which are dealt with as embedded clauses in this work. Embedded clauses in Alamblak, constituents *within* the matrix, independent clause, do indeed manifest the correlation between a high degree of cohesion and semantic subordination Thompson and Longacre describe.

120. Conrad 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 relationship between the sentences of the language.

121. There are three types of subordination 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 characterised 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 2.4.

The internal linking pattern occurs with both clauses of the comparative sentence. This pattern may be analysed as a topicalisation 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 topicalisation pattern is the same as a subordinating intonational pattern on clauses. Johnston (1978:282) describes all subordinate clauses in Nakanai as topicalised elements of the sentence by analogy with topicalisation strategies on NP's. The parallel between topicalisation and subordination is evident in Alamblak as well, although topicalisation only infrequently occurs in Alamblak.

122. The 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 sentence-final falling intonation is indicated by a full stop (.).

123. As noted on p.253, 255, Longacre associates two 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 intersentential pattern in Alamblak 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 exception, e.g.,

Jigrm noh-buga-më -m. T+mbëngafi-rpa -r korh -wë -r,
Jigrim die-all -R.PST-3PL *T+mbëngafi-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.)*

124. The 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 Alamblak with a resemblance phrase manifested in the periphery of an independent clause (cf. Table 79).

125. As noted on p.255, 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 Alamblak which is equivalent to the notion of proportions, however.

Longacre (1976:123) categorieses 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 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 Alamblak, 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 Alamblak system and may prove to be redundant in a universal semantic system, as well.

126. The independent negative imperative clause has a different suffix (-wah)

(1) a -i -wah-n
HORT-*go*-NEG-2S
Don't go!

127. The negative of uncertainty normally occurs with future tense forms of the predicate. It is not so restricted with the irrealis clause.

128. Comrie (1976a:60-61) discusses the natural affinity of perfect aspect and recent past time reference.

129. Longacre (1976) discusses "warning" as a semantic relation within the more general "Implicational" relationships. Warning as a relationship between clauses is expressed intersententially in Alamblak, rather than by a single sentence type, e.g.

(1)a. waitwa tekko. Ninho yënr yëhnirahr.
go to.the.river your child go.down.into.will.he
Go to the river. Your child will go down into (it).
(= Go to the river, lest your child fall in.)

b. mirahnëm ɨnd-ko añëm. Nandëmm wasrahmnëm.
we.will.say DEM-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.)

130. The asymmetry caused by the non-final clause may be due to a historical replacement in which the contrafactuality derives from the clause in $Base_2$. 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.

131. Other types of counter expectancies (or "frustration" in Longacre's terms, 1976:149ff) are encoded by the antithetical sentence type in Alamblak.

132. The 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 79) expresses the simile as an illustration of the subject NP of the clause, e.g.

(1) Res. PH

metf yawym kañjë nanayurhasiwf
women dogs like fighting.are.they
The woman are fighting like dogs.

Intersententially a resemblance clause may make a comparison with the previous sentence e.g.,

(2) Yawym masat nanayurwëm. Meft iñji nanayurwëf.
Dogs fight a lot. *The (two) women fight like that.*

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.

(3) Mienrpar dohhingnamarñaeter.
Only Mien *is a good canoe maker.*

Ɨndar rër hingnamë doht wahɨtint.
Look at this canoe which he made.

133. Other types of paraphrase relationships are encoded on the clause level and intersententially. Amplification paraphrase is encoded by a clause manifesting a post-verbal amplification slot following a final intonation pattern, e.g.

(1)a. Amplification

yënkmim fëhr tufɨnahmr; tembe.
group.of.children pig shot with.bows
A group of children shot a pig; with bows.

b. windëhmëm; windëhñifhamëm.
They sang, they sang until daybreak.

A generic-specific paraphrase relationship is encoded by juxtaposed sentences, e.g.

(2) rpa yimar nohmër. Buktko thëfm wasmëmr.
one man died.he headwaters residents speared.they.him
One man died. The residents of the headwaters (area) speared him.

134. The quotation sentence may manifest base$_1$ of the antithetical sentence, to encode notions of frustrated intention and frustrated attribution. If the extra-linguistic context is such that the counter statement (Base$_2$) to Base$_1$ is unnecessary, the quotation sentence in isolation may express these notions. Thus, example 405 can imply that the man intended to go "there" but in fact never did go. Similarly, the sentence below may imply that the man thought it was a pig, but obviously (inferred from the context) it was not.

(1) ɨnd yimar famur fëh-e -r
DEM *man* *said/thought pig*-COP-3SM
The man thought, "It is a pig".

135. kamuk is the present tense form of the irregular verb may *say/think* (cf. Table 61).

136. 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. 3.2.3.2.4 and 3.4.1). 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).

137. The 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 dependent clauses (Table 108 and 109) manifesting the different actor (DA) suffix. Aspects of the switch reference system are discussed in section 3.7.4.

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 Part Two, primarily in section 2.1.2.

The forms for nayay *come* (conjugation II) are as follows:

	R.PST	N.PST	I.PST	PR	FUT
1S	nᵉˈamᵉa	nᵉˈarˠᵉa	ˈnia	ˈniwa	ˈneřgwa
D	nᵉˈamɛ̈nɛ̈	nᵉaˈřɛ̈nɛ̈	nᵉˈañɛ̈	nⁱˈewnɛ̈	neˈřagɨnɛ̈
PL	nᵉˈamɛ̈nɛ̈m	nᵉaˈřɛ̈nɛ̈m	nᵉˈañɛ̈m	nⁱˈewnɛ̈m	neˈřagɨnɛ̈m
2S	nᵉˈamɔ	nᵉˈařɛ̈	nⁱˈɛ	nⁱˈewn	neˈřagɨn
D	nᵉaˈmɛ̈ƀɨn	nᵉaˈřɛ̈ƀɨn	nⁱˈɛƀɨn	nⁱˈeᵒƀɨn	neˈřagɨƀɨn
PL	nᵉaˈmɛ̈kɛ̈	nᵉaˈřɛ̈kɛ̈	nⁱˈekɛ̈	nⁱˈeᵒkɛ̈	neˈřaxkɛ̈
3SM	nᵉˈamɛ̈Ř	nᵉˈařɛ̈Ř	nᵉˈaŘʏ	nⁱˈewŘ	neˈřagɨŘ
SF	nᵉˈamɛ̈t	nᵉˈařɛ̈t	nᵉˈač	nⁱˈewt	neˈřagɨt
D	nᵉˈamɛ̈ꝑ	nᵉˈařɛ̈ꝑ	nⁱˈɛꝑ	nⁱˈeᵒꝑ	neˈřagɨꝑ
PL	nᵉˈamɛ̈m	nᵉˈařɛ̈m	nⁱˈɛm	nⁱˈeᵒm	neˈřagɨm

The forms for hay *give* (irregular conjugation I) are as follows:

A	U	R.PST	N.PST	I.PST
1S	2S	xemᵉˈanɨn	xařʏᵉˈanɨn	ꝑaguˈyanɨn
D	D	xemɨˈnɛ̈nɨƀɨn	xařʏɛ̈ˈnɛ̈nɨƀɨn	ꝑaguˈnɛ̈nɨƀɨn
PL	PL	xemɨˈnɛ̈mkɛ̈	xařʏɛ̈ˈnɛ̈mkɛ̈	ꝑaguˈnɛ̈mkɛ̈
2S	3SM	xeˈmɛ̈nɨŘ	xaˈřʏɛ̈nɨŘ	ꝑaˈgunɨŘ
D	D	xeˈmɛ̈ƀɨnɨꝑ	xaˈrʏɛ̈ƀɨnɨꝑ	ꝑaˈgubɨnɨꝑ
PL	PL	xemɛ̈ˈkɛ̈mɨm	xařʏɛ̈ˈkɛ̈mɨm	ꝑaguˈkɛ̈mɨm
3SM	1S	xeˈmɛ̈řa	xaˈřʏɛ̈řa	ꝑaˈguřa
SF	S	xeˈmɛ̈ta	xaˈřʏɛ̈ta	ꝑaˈguta
D	D	xeˈmɛ̈ƀɨnɛ̈	xaˈřʏɛ̈ƀɨnɛ̈	ꝑaˈgubɨnɛ̈

A	U	PR	FUT
1S	2S	kaguk'wan+n	xi'ř̆gwan+n
D	D	kagukw+'nɛ̈n+ƀ+n	'xiřag+'nɛ̈n+ƀ+n
PL	PL	kagukw+'nɛ̈mkɛ̈	'xiřag+'nɛ̈mkɛ̈
2S	3SM	kaguk'wɛ̈n+Ř̆	xi'řag+n+Ř̆
D	D	kaguk'woƀ+n+ƥ	xi'řag+ƀ+n+nɛ̈
PL	PL	ka'gukwo'kɛ̈m+m	xi'řaxk+m+nɛ̈m
3SM	1S	kaguk'woř̆a	xi'řag+ř̆a
SF	S	kaguk'wota	xi'řag+ta
D	D	kaguk'woƀ+nɛ̈	xi'řag+ƀ+nɛ̈
PL	PL	kaguk'wom+nɛ̈m	xi'řag+m+nɛ̈m

APPENDIX B: COUNTING AND TALLY SYSTEMS

1. INTRODUCTION

Cardinal numerals one to five, ten, and twenty modulo twenty are described in section 3.2.3.2.3. 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.

2. HIGHER NUMERALS

Numerals for six and above can be formed by the coordinate numeral phrase which is described in Table 129.

Table 129: Coordinate numeral phrase

Functions	+ $Nucleus_1$	+ $Conj_1$	+ $Nucleus_2$	$\pm$ (+ $Conj_2$	+ $Nucleus_3$)^n
exponents	Multiplier phrase	-i	Multiplier phrase	-e	Multiplier phrase

Notes: Only a minimal form of the multiplier phrase may manifest the $Nucleus_1$ function.

Theoretically any numeral can be formed by repeating $Conjunction_2$ + $Nucleus_3$ indefinitely, or the coordinate numeral phrase may manifest a quantifier function in an NP by not including the terminator on the final multiplier phrase. In practice, however, the coordinate 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 coordinate numeral phrase is manifested by conjoined phrases called multiplier phrases. The multiplier phrase is portrayed in Table 130.

Table 130: Multiplier phrase

Functions	± Relator	± Modifier	+ Nucleus	+ Terminator	± Emphatic
exponents	manakor *at the other side* wom *another*	Possessive phrase (v. Table 43, p.115)	Multiplier base (v. Table 38, p.103)	PNG markers (v. Table 34)	-n

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 coordinate numeral phrase. The exponents of this function are listed in Table 130.

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 cooccur with which exponents of the nucleus of a preceding multiplier phrase. Some examples of numerals are given in example 431 which 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 coordinate numeral phrase, it may exhibit the constituents as described in Table 43 plus a further exponent of the head; viz., wura *foot*. A multiplier phrase exhibiting wura in the nucleus function is illustrated in example 431(c).

431(a). Multiplier phrase | Conj | Multiplier phrase

Nuc: Mult.Base		Term		Relator	Modifier	Nucleus	Term
Nuc	Delim						
tir	yoht	-t	-i	manakor	tirtho	rpa	-t
hand	*whole*	-3SF	*-and*	*other.side*	*hand's*	*one*	-3SF
six							
(b). tir	hos	-f	-i		wuratho	rpa	-t
hand	*two*	-3D	*-and*		*foot's*	*one*	-3SF
eleven							

431(c). Multiplier phrase | Conj | Multiplier phrase
Nuc: Mult.Base | Term | Mult. Base | Term
Nuc | Delim | Nuc | Delim
tir hos -f -i wura yoht -t
hand two -3D *-and foot whole* -3SF
fifteen

(d). Multiplier phrase | Conj | Multiplier phrase
Nuc: Mult.Base | Relator | Modifier | Nucleus | Term
Nuc | Delim | Term
yima hosfirpa -t -i wom yimarho tir hos -f
person three -3SF *-and another person's hand two* -3D
seventy

(e). Multiplier phrase | Conj
tir hos-f -i
hand two-3D *-and*

Multiplier phrase | Conj
Mult. Base
wura yoht -t -e
foot whole-3SF *-and*

Multiplier phrase
Relator | Modifier | Nucl. | Term | Emph.
wom wuratho rpa -t -n
another foot's one -3SF -EMP
sixteen!

3. MONEY-COUNTING CONSTRUCTIONS

Monetary units are counted in two ways. The ten-toea unit is formed in one way and the single-toea, K1, and K10 units in another. Single-toea, one-kina, and ten-kina units are formed by a modifier phrase type consisting of a cardinal number quantifying one of three possible heads.

Table 131: Monetary phrase base

Functions	+ Quantifier	+ Nucleus
exponents	numeral	taḧy *stone* (=toea ≃cent)
	Coordinate numeral phrase	toa *leaf* (=kina ≃dollar)[1]
		m̈ngiñ *stick* (=ten-kina unit)

Note: The coordinate numeral phrase co-occurs only with m̈ngiñ *stick*. A truncated form (lacking the terminator of the last multiplier phrase) co-occurs with taḧy and toa.

The ten-toea 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.

(a). tir yoht -fa -t
hand whole-ten.monetary.unit-3SF
fifty toea ≃fifty cents

(b). rpa-fa -t -i rpa-tah+y-t
one-ten.monetary.unit-3SF-*and one-stone*-3SF
eleven toea

(c). yima hos-f m+ngiñ-m -i tir yoht -t m+ngiñ-m -e rpa
person two-3D *stick* -3PL-*and hand whole*-3SF *stick* -3PL-*and one*

toa -t -e rpa-fa -t
leaf-3SF-*and one-ten.monetary.unit*-3SF
K451.10

4. TALLY SYSTEMS

There is a men's and a women's tally system in Alamblak, both reported to be borrowed from the Maramuni[2] 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 on 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 one, are qualified with a relator: mkukor or manakor *other side*.

Men's tally system:

1.	kambrë piñaf-r	*little finger*
2.	boha piñaf-r	*ring finger*
3.	r+kuyakwënt-r	*middle finger*
4.	nëngritkom-r	*index finger*
5.	m+ma piñaf-r	*thumb*
6.	wafi-t	*palm*
7.	gramtip-t	*forearm*
8.	tirngënha-t	*elbow (outer)*
9.	bohdëbi-t	*biceps*
10.	bringa-t	*shoulder*
11.	rengom-t	*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.[3] At least three additional points occur in Alamblak giving a total of 29 vis-a-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.

NOTES

1. At 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. Alamblak people have exhibited great facility in adapting to four monetary systems in their lifetime (German, Australian £.s.d., Australian decimal, and the present Papua New Guinean).

2. Maramuni is an Enga dialect of the West-Central family of the East Central Trans-New Guinea phylum (Wurm 1975). 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.

3. Refer to Kirschbaum (1938) for a discussion of the Maramuni system.

APPENDIX C: THE SPIRIT WHO TURNED INTO AN ANIMAL
as told by Ginab Silapon, Amongabi, 1970

[pɨtɨ'ɡɛ̈rɡwant] [yaw'ñɨmbɨɡ°t]
Tɨndht pɨthë-rhwa-an-t. Yima -r yawy-ñɨmbh-t yi-më -r.
legend tell -FUT -1S-3SF *person*-3SM *dog -part* -3SF *go*-R.PST-3SM
I will tell you a legend of a man who went with a pack of dogs.

Krif -nanë yima -r rë-r -ho met -t kfë -më -r -t,
afternoon-G.SET *person*-3SM 3 -3SM-GEN *woman*-3SF *speak*-R.PST-3SM-3SF
In the afternoon, the man spoke to his wife, he said,

['memɛ̈Ř] ['nuam]
may-më -r, "Dɨbha -nanë wa -sina-kah-a -n -n, nua -m
say-R.PST-3SM *morning*-G.SET IMPER-*rise*-IRR-PRSUP-1S-G.DEP *sago.pancake*-3PL
"In the morning having gotten up

wa -ton-hi -twa -n -a dɨbha -n." Dɨbha -nanë rë-r -ho met -t
IMPER-*fry*-BEN-FUT.IRR-2S-1S *morning*-S.SET *morning*-G.SET 3 -3SM-GEN *woman*-3SF
fry me some sago, in the morning." In the morning, his wife,

sina-hatë, nua -m ton-he -më -t -r. Nua -m ton-he -
rise-SA *sago.pancake*-3PL *fry*-BEN-R.PST-3SF-3SM *sago.pancake*-3PL *fry*-BEN-
having gotten up, she fried some sago for him. When she had fried some sago

[yaom]
-më -t -t -r, yawy-m fak-më -r rë-r -ho temb-t yak-ni-hatë,
-R.PST-DA-3SF-3SM *dog* -3PL *get*-R.PST-3SM 3 -3SM-GEN *bow* -3SF *get-go*-SA
for him, he got his dogs and bow. Having gotten them then,

yi-më -r.
go-R.PST-3SM
he went.

[ɒakxañmɛ̈Ř]
Yi-më -r, yi-më -r, fëh-r, këmbru, fak-hayni-më -r.
go-R.PST-3SM *go*-R.PST-3SM *pig*-3SM *cuscus* *get-take* -R.PST-3SM
He went and went; he picked up and took pig and cuscus[1]

[yak'xañ] [yak'xañ] [yak'xañ] [yak'xañ]
Yak-hayni, yak-hayni, yak-hayni, yak-hayni, rë-r i no brbo tëh -më -r,
get-take *get-take* *get-take* *get-take* 3 -3SM NEG *near.by stand*-R.PST-3SM
Getting and taking, getting and taking, getting and taking, getting and taking; he did not live nearby,

['yukes] ['yak'xañ]
yukay-t kit -t yi-më -r. Yak-hayni, ndɨ fëh-r nungwa-t, këmbru,
far -3SF *place*-3SF *go*-R.PST-3SM *get-take* DEM *pig*-3SM *bird* -3SF *cuscus*
he went a long way. Getting and taking, getting and taking the pig, bird, cuscus,

['yak'xañ] ['yak'xañ]
yak-hayni, yak-hayni yoh -r fur -kih -më -r.
get-take get-take string.bag-3SM *motion.to.level.plane-fill*-R.PST-3SM
getting and taking, the string bag filled up.

Fur -kih -më -t -r wurëh-t krif -kisf-mif,
motion.to.level.plane-fill-R.PST-DA-3SM *last* -3SF *afternoon-dusk-true*
It having filled up, then he arrived

[n^{e}'amɛ̈ʁ]
krif -kisf-mif nayay-më -r tfi, tur -ho mëngra-t.
afternoon-dusk-true come -R.PST-3SM *then* E/R.3SM-GEN *camp* -3SF
at his own camp house at last light, truly at dusk.

[ne^{ə}'ɡatɛ̈]
Mëngra-t nayay-hatë, orait, gɨjohma gɨjohma -yuk
camp -3SF *come* -SA *alright pull.friction.fire pull.friction.fire*-PUR
Having come to the camp house, alright, he got a strip

mɨtitëf-t yak-më -r -n yo gɨjohma mɨy -ef -t
vine -3SF *get*-R.PST-3SM-G.DEP *okay pull.friction.fire tree-moderate.size*-3SF
for making a friction fire and then, there now, having gotten a stick

yak-hatë, gɨjohma -më -r.
get-SA *pull.friction.fire*-R.PST-3SM
for making a friction fire, he pulled the strip back and forth.

Gɨjohma -më -r, nëthon -r -ko
pull.friction.fire-R.PST-3SM *forest.spirit*-3SM-ELEV
He pulled the strip back and forth and a forest spirit up

gɨjohma -më -r. Rë-r -we gɨjohma -më -r,
pull.friction.fire-R.PST-3SM 3 -3SM-ELEV *pull.friction.fire*-R.PST-3SM
above him pulled a strip back and forth. The one down below pulled the strip

nëthon -r gɨjohma -më -r. Orait.
forest.spirit-3SM *pull.friction.fire*-R.PST-3SM *alright*
back and forth and the forest spirit pulled a strip back and forth. Alright, then.

Orait mɨtitëf-t rë-r -ho teh -puk -më -r -t, nɨthon -r
alright vine -3SF 3 -3SM-GEN *pull-break*-R.PST-3SM-3SF *forest.spirit*-3SM
He pulled and broke his strip and the forest spirit

teh -puk -më -r -t. Orait tfi wom -t fak-më -r, nhap
pull-break-R.PST-3SM-3SF *alright then another*-3SF *get*-R.PST-3SM *also*
pulled and broke his. Alright, then he got another one and

ndɨ-t gɨjohma -më -r; rë-r teh -më -r të-r -ko
DEM-3SF *pull.friction.fire*-R.PST-3SM 3 -3SM *pull*-R.PST-3SM *be*-3SM-ELEV
pulled that one back and forth also; he pulled, and there up there up

yurka-nanë teh -më -r. Ndɨ-na-t -pnë gɨjohma -m mɨtitëf-m,
up -G.SET *pull*-R.PST-3SM DEM-*do*-3SF-REF *pull.friction.fire*-3PL *vine* -3PL
above he pulled. With doing that he

pinisim-më -r -m.
use.up -R.PST-3SM-3PL
used up the strips.

Pinisim-më -r -m, ee temb-t -ho wom -t
use.up -R.PST-3SM-3PL *alright.then bow* -3SF-GEN *another*-3SF
He used them up, alright then, having released a bow string

yak-tour -ak -hatë, ndɨ-t gɨjohma -buga-më -r -t, orait
get-release - *get*-SA DEM-3SF *pull.friction.fire-all* -R.PST-3SM-3SF *alright*
and having gotten another one from the bow he pulled it back and forth until it

['memɛ̈ř] [yaktihamb'ria]
may-më -r 'Tfi wom -m yakti-hambrë -a."
say-R.PST-3SM *then another*-3PL *touch-search.for*-1S
broke; alright he thought, "I will feel around for some others."

Yakti-hambrë -hañ, ri -fakti-ni-më -r -r, nëthon -r.
touch-search.for-CONT.*to* ELEV-*touch-go*-R.PST-3SM-3SM *forest.spirit*-3SM
Feeling around he reached across, touched the spirit and moved on.

['mařʸmɛ̈ře]
Ri -fakti-ni-hatë, fiñji may-r -më -r -e 'Fëhtasë fiñji
ELEV-*touch-go*-SA NEG *say*-IRR-R.PST-3SM-G.DEP *startle what*
Having touched across and gone on he did not say "being startled what

['nəřgwa] [nɨ'gobjɛ̈]
na-rhw-a, 'nhai. Fakti-ni-hatë, yawy-m be nhofjë mi -fɨnah -ni-hatë,
do-FUT-1S *no* *touch-go*-SA *dog* -3PL *enough carefully* ELEV-*arrive-go*-SA
shall I do?" No. Having touched and gone on, the dogs having simply quietly

yifhatik-t, kiak -më -r -t, darëmbë-marña-r mɨti-t ri -fak-
doorway -3SF *close.door*-R.PST-3SM-3SF *bar* -*good* -3SM *vine*-3SF ELEV *get-*
gone down and out, he closed the doorway; he laid planks solidly, across to the

[yaom] [nɨ'gobjɛ̈]
-më -r ki -më -r -t, ki -tañ-hatë, yawy-m be nhofjë
-R.PST-3SM *tie*-R.PST-3SM-3SF *tie*-CPL-SA *dog* -3PL *enough carefully*
side he got a vine, he tied it up; having completely tied it, that's all,

['wurae]
tir -e wura-e fak-ni-hatë, yi-më -r. Yo yemrë-r-oh
hand/arm-INS *foot*-INS *get-go*-SA *go*-R.PST-3SM EXCL *meat* -3-GEN.PL
cautiously getting the dogs going with his arms and feet he went. It was with

yoh -t, temb, yi-më -r. Yifung-nanë yi-më -r.
string.bag-3SF *bow* *go*-R.PST-3SM *night* -G.SET *go*-R.PST-3SM
the bow and meat, string bag that he went. He went in the night.

['tɛ̈gwore]
Yi, em nau rë-r Tëngënbi-t -i Rekɨn -r bi tëh -wë -r -e,
go *alright* 3 -3SM P.NAME -3SF-CONJ P.NAME-3SM *now* *stand*-IMPF-3SM-G.DEP
Going, okay, he is now as far away as Rekin from Tanganbit

[naŋgɪñ'sikɨt]
nëthon -r mi -suh -më -r nangiñ -tik -t. Mi -suh -
forest.spirit-3SM ELEV-*descend*-R.PST-3SM *palm.bark-platform*-3SF ELEV-*descend*-
and the forest spirit jumped down onto the floor. Having jumped down,

-watë, bɨt yhëm-dëmbrangak, rim -dëmbrangak, yhëm-dëmbrangak,
-SA *then* ELEV-*make.a.racket* ELEV-*make.a.racket* ELEV-*make.a.racket*
then making a racket down, making a racket to the side, making a racket down,

rim -dëmbrangak, em nau wurëh-na-t -pnë, rim -dëmbrangak -hatë, kiak-t
ELEV-*make.a.racket* *alright* *last* *-do*-3SF-REF ELEV-*make.a.racket*-SA *door*-3SF
making a racket to the side, alright, doing that the last time having made a

tabbo -fɨnah - më -r, mi -brñi -më -r -we, mi -suh -ni-më -
rush.out-arrive- R.PST -3SM ELEV-*move.go*-R.PST-3SM-ELEV ELEV-*descend-go*-R.PST-
racket to the side he broke out through the door, he went down, he jumped down

-r bbiñsëf-t. Mi -suh -hatë bbiñsëf-t, rë-r gëb -t
-3SM *ground* -3SF ELEV-*descend*-SA *ground* -3SF 3 -3SM *odour*-3SF
to the ground. Having jumped down to the ground,

[rimɛ̈tɨgatiak]
rim -mëtha-ti -ak, më -mëtha-ti -ak, em nau wurëh-na-t -pnë, mëtha-
ELEV-*smell-for-get* ELEV-*smell-for-get* *alright* *last* *-do*-3SF-REF *smell-*
he sniffed out the odour; sniffed out, alright, finally doing that, he sniffed

-ti -ak -ni-më -r -r, fak-hik -ak -ni-më -r -r yima -r
-for-get-go-R.PST-3SM-3SM *get-follow*-INCHO-*go*-R.PST-3SM-3SM *person*-3SM
out and followed him. He got it and began following him. The man

wañ -ak -më -r -r bi brbo-et -e -r.
hear-get-R.PST-3SM-3SM *already* *near*-POSSD-COP-3SM
heard him being already nearby.

[yaom]
Ndɨ yemrë-r-oh yoh -t suso-hatë wom yawy-m
DEM *meat* -3-GEN.PL *string.bag*-3SF *open*-SA *other* *dog* -3PL
Having opened up the meat, string bag, he left some dogs

[hɨtɨtañ'gemɛ̈ɤ]
hɨta-tañ-hay -më -r. Hɨta-tañ-hay -hatë, rë-r yi-më -r.
put -CPL *give*-R.PST-3SM *put* -CPL-*give*-SA 3 -3SM *go*-R.PST-3SM
and gave some to them. Having given some to them and

[yaom]
Nëthon -r yhëm-hɨti-më -r -m ndɨ yawy-m, orait, rë-r -pnë
forest.spirit-3SM ELEV-*see* -R.PST-3SM-3PL DEM *dog* -3PL *alright* 3 -3SM-REF
leaving them, he went. The forest spirit looked down at them, at the dogs;

[nəna'yuřɨm] [nəna'yuřɨm] [nəna'yuřgasɛ̈gatɛ̈]
na -nayur-m, na -nayur-m, na -nayur-hasë -hatë, yay-jɨbërfa -
REC-*fight*-3PL REC-*fight*-3PL REC-*fight*-CONT.STATE-SA *eat-open.belly-*
alright, with him they fought and fought. Having been fighting and having

-tañ-hatë-ne, orait.
-CPL-SA -G.DEP *alright*
bitten open and eaten their bellies, then, alright.

Nhapt rë-r gëb -t, yak-hik -ak -ni, yima -r -ho gëb -t,
again 3 -3SM *odour*-3SF *get-follow-get-go person*-3SM-GEN *odour*-3SF
Again he got the scent and followed the mans' scent.

[wañsañgatɛ̈]
nëthon -r yak-hik -ak -ni, nhap, yima -r wañ -tañ-hatë,
forest.spirit-3SM *get-follow-get-go again person*-3SM *hear*-CPL-SA
The forest spirit got and followed it. Again the man having heard

wañ -ak bi a -së-r bi brbo, wom yemrë-t, këmbru, fëh-t,
hear-get now near-be-3SM *now near other meat* -3SF *cuscus pig*-3SF
hearing that he was now near, he got and put some more meat, cuscus, pig,

[yakxɨtɨtañgigatɛ̈] [yaom]
yak-hɨta-tañ-hi -hatë yawy-m, orait. Nhap nëthon -r brbo yi-hatë,
get-put -CPL-BEN-SA *dog* -3PL *alright again forest.spirit*-3SM *near go*-SA
alright. Again the forest spirit having gone,

[nə'nayuřgatɛ̈] [nə'nayuř]
na -nayur-hatë, na -nayur yay-jɨbërfa -tañ iñji na-hañ,
REC-*fight*-SA REC-*fight eat-open.belly*-CPL *thus do*-CONT.*to*
having fought and fought biting open and eating their bellies, doing like that,

[yaom] [n'dɛ̈mbɨga]
orait wurëh këmbru, wurëh yawy-m. Ndɨ-na-t -pnë ndɨ-ëmbha
alright last cuscus last dog -3PL DEM-*do*-3SF-REF DEM-*place*
alright, then the last of the cuscus and dogs. Therefore, he put them there

[xɨtɨtañgemɛ̈řɨm]
hɨta-tañ-hay -më -r -m. Yemrë, fëh-yoh -m wurëh-m. Fëh-r,
put -CPL-*give*-R.PST-3SM-3PL *meat pig-string.bag*-3PL *last* -3PL *pig*-3SM
and gave to them the last of the meat, string bag of pig meat.

[yaom] [n'dɛ̈mbɨga] [hɨtɨtañgi'gatɛ̈ne]
këmbru, yo wurëh yawy-m ndɨ-ëmbha hɨta-tañ-hay -hatë-ne. Em nau.
cuscus okay last dog -3PL DEM-*place put* -CPL-*give*-SA -G.DEP *alright*
Okay there he put the last of the dogs and gave pig and cuscus to them; there
now.

Rë-r mip -r wa -toni-ak -më -r. Ndɨ-m mip -r
3 -3SM type.of.tree-3SM ELEV-*run* -*get*-R.PST-3SM DEM-3PL type.of.tree-3SM
He ran down to a mipr *tree. (Those* mipr *trees are*

yuk -e -r. Toni-ak bi gha -pɨtɨmen-r -ko. Gha -pɨtɨmen-r,
long-COP-3SM *run -get now tree.top-tip* -3SM-AL *tree.top-tip* -3SM
tall). He ran to it and got to the tip top of the tree.

[n^{e}'amɛ̈ř]
më -rh -më -r. Orait nëthon -r nayay-më -r,
ELEV-*sit*-R.PST-3SM *alright forest.spirit*-3SM *come* -R.PST-3SM
He sat down in the tip top of the tree. Alright, the forest spirit came;

[ne^{ə}'ɡatɛ̈ne] [yaom] [yaompɨnɛ̈] [nənayuř] [nənayuř]
nayay-hatë-ne wurëh yawy-m. Wurëh yawy-m -pnë na -nayur, na -nayur
come -SA -G.DEP *last dog* -3PL *last dog* -3PL-REF REC-*fight* REC-*fight*
having come there were the last of the dogs. He fought and fought with the last

[yejɨ'bəřɓəɡatɛ̈] [yejɨ'bəřɓətañmɛ̈řɨm]
yay-jɨbërfa -hatë, yay-jɨbërfa -tañ-më -r -m, em nau. Rë-r
eat-open.belly-SA *eat-open.belly*-CPL-R.PST-3SM-3PL *okay* 3 -3SM
of the dogs. Having bitten open and eaten their bellies, he bit open and ate

gëb -t rim -mëtha-ti -ak -më -r rim -mëtha-ti -ak rim -mëtha-ti -ak,
odour-3SF ELEV-*smell-for-get*-R.PST-3SM ELEV-*smell-for-get* ELEV-*smell-for-get*
their bellies. Okay. He sniffed out his odour. He sniffed and sniffed,

wurëh na-t -pnë rë-r gëb -t mëtha-ti -më -r -r em nau.
last do-3SF-REF 3 -3SM *odour*-3SF *smell-for*-R.PST-3SM-3SM *okay*
finally he smelled his odour, right.

Fak-hik -ak -ni-më -r -r, ndɨ mip -tiha-r rim -mëtha-ti -më -r.
get-follow-get-go-R.PST-3SM-3SM DEM type.of.tree-*huge*-3SM ELEV-*smell-for*-R.PST-3SM
He got the scent and followed him; he smelled over to the huge mipr *tree.*

Orait, ndɨ nëthon -r wa -toni-ak -më -r bin-ko, rë-r
alright DEM *forest.spirit*-3SM ELEV-*run -get*-R.PST-3SM *now*-ELEV 3 -3SM
Alright, the forest spirit ran down to it,

yima -mif -r -ko bi nëthon -r -ho -m fër yufa-m
person-real-3SM-ELEV *now forest.spirit*-3SM-GEN-3PL *black.magic name*-3PL
up there the real man already had the incantation for

tu -fɨnah -yuk-m. Yuta-yur -bë -yur -hasë -më -r,
MOTION-*arrive*-PUR-3PL *name-activate*-LIG-*activate*-CONT.*at*-R.PST-3SM
shooting forest spirits. He was calling out the incantation thus activating

nëthon -r yi-më -r -ko, muh -më -r brbo, brbo, "Wurëh
forest.spirit-3SM *go*-R.PST-3SM-ELEV *climb*-R.PST-3SM *near near last*
the magic. The forest spirit went up, he climbed up. He came nearer and nearer,

[miyakɒɨnaɡtwanɨ'ɡərɡwa] [tuɓɨnaɡabmɛ̈řɨře]
mi -yak-fɨnah -twanha-rhw-a." Tu -fɨnah -af -më -r -r -e
ELEV-*get-arrive-truly* -FUT-1S MOTION-*arrive*-PROL-R.PST-3SM-3SM-G.DEP
"I will certainly get to the last part", he said. He shot him with a

darhi ña -e. Bbiñsëf-t mi -suh -më -r.
black.palm arrow-INS *ground* -3SF ELEV-*descend*-R.PST-3SM
black palm arrow and he fell. He fell down to the ground.

Bbiñsëf-t mi -suh -hatë ndɨ nëthon -r, orait, nëthon -
ground -3SF ELEV-*descend*-SA DEM *forest.spirit*-3SM *alright forest.spirit*-
Having fallen to the ground, that forest spirit,

[me'mouřɨŘ] ['wan^{e}a] [mřɛ̈kɨɓebɱ]
-r may-më -w -r -r "Rah, rah, rah, wa -naya. Mrëkɨfef-m
-3SM *say*-R.PST-IMPF-3SM-3SM IMPER-*come* *talk* -3PL
he was repeating "ragh, ragh, ragh, you come. I will tell you something."

[memɛ̈rɨŘ]
pɨthë-rhw-an-n." Orait wom -pa -m may-më -r -r "Rah, rah, rah,
speak-FUT-1S-2S *alright other*-der.of-3PL *say*-R.PST-3SM-3SM
Alright, he said again, "ragh, ragh, ragh,

['wan^{e}a]
wa -naya. Mrëkɨfef-m pɨthë-rhw-an-n." Orait, ndɨ-na-t -pnë yima -r
IMPER-*come* *talk* -3PL *speak*-FUT-1S-2S *alright* DEM-*do*-3SF-REF *person*-3SM
you come; I will tell you something." Alright,

wañ -yakyou-hatë-ne mi -fɨnah -na -më -r. Mi -fɨnah -na -më -r,
hear-agree -SA -G.DEP ELEV-*arrive-come*-R.PST-3SM ELEV-*arrive-come*-R.PST-3SM
with that the man agreed and came down. He came down;

orait. Ndɨ ña -r -ho fër -t, tu -yak tu -hëmbre -yuk
alright DEM *arrow*-3SM-GEN *black.magic*-3SF MOTION-*get* MOTION-*put.into*-PUR
there now. He spoke giving him the black magic of an arrow, white magic to

fër -t darhi -toa -r-oh fër -t, ken ken fër -
black.magic-3SF *black.palm-leaf*-3-GEN.PL *black.magic*-3SF *various black.magic-*
neutralise spiritual powers and the black magic of black palm leaves, various

[wəgañ'swəna]
-m kfë -hi -hatë-ne may-më -r -e "Wa -hay -ni-tw -a -n -a
-3PL *speak*-BEN-SA -G.DEP *say*-R.PST-3SM-G.DEP IMPER-CAUS-*go*-FUT.IMPER-IRR-2S-1S
incantations and then said "take me to the

kɨmi -ko."
village-AL
village."

[xañ'mɛ̈řɨŘ]
Mɨti-tëf -t yak-hatë gurbët -hatë, hay -ni-më -r -r
vine-rope.like-3SF *get*-SA *hang.over.shoulder*-SA CAUS-*go*-R.PST-3SM-3SM
Having gotten a vine, and having hung it over his shoulder, he took him to

kɨmi -ko. Hay -ni-më -r -r kɨmi -ko brbo kɨmi -t -n -ko-ne
village-AL CAUS-*go*-R.PST-3SM-3SM *village*-AL *near village*-3SF-G.SET-AL-G.DEP
the village. He took him to the village and near the village

[mɛ̈ɡɨtɨ'tañimɛ̈Ř]
më -hɨta-tañ-ni-më -r. Më -hɨta-tañ-ni-hatë, më -hɨta-tañ-ni-hatë,
ELEV-*put* -CPL-*go*-R.PST-3SM ELEV-*put* -CPL-*go*-SA ELEV-*put* -CPL-*go*-SA
he put him down and left him. Having put him down and leaving him, now then,

em nau kɨmi -t yi-më -r. Yi-hatë, damhi, nua -m,
okay village-3SF *go*-R.PST-3SM *go*-SA *tobacco fried.sago*-3PL
he went into the village. Having gone,

[yemarña'ɡatɛ̈ne] [me'mɛ̈Řɨm]
yay-marña-hatë-ne kɨmi -thëf -m may-më -r -m, ''Këmbru-r -we
eat-well -SA -G.DEP *village-resident*-3PL *say*-R.PST-3SM-3PL *cuscus*-3SM-ELEV
having eaten well and having had a nice smoke he said to the villagers,

[waɡitan^{e}'anɨŘ] ['añɛ̈m] ['añɛ̈mwe]
wa -hɨta-nayay-an-r, a -i -nëm. A -i -nëm-we.''
ELEV-*put* -*come* -1S-3SM HORT-*go*-1PL HORT-*go*-1PL-ELEV
"I put a cuscus down there when I came, let's go, let's go down."

[kɨƀab'mɛ̈Řɨm]
Orait rë-r kɨfë-af -më -r -m, rë̈-r -ho than-m rë-m,
alright 3 -3SM *tell*-PROL-R.PST-3SM-3PL 3 -3SM-GEN *wife*-3PL 3 -3PL
Alright, he spoke and left them and said to his wife

[me'mɛ̈Řɨm] [wañjuko]
may-më -r -m, ''wa -i -ndu -ko mëngra-ko.'' Rë-m mëngra-ko yi-më -m,
say-R.PST-3SM-3PL IMPER-*go*-DEM?-AL *camp* -AL 3 -3PL *camp* -AL *go*-R.PST-3PL
and children, "Go ahead to the camp house." They went to the camp house.

rë-m ndɨ kɨmi -thëf -m yi-hatë, këmbru-r skunët-më -m -r.
3 -3PL DEM *village-resident*-3PL *go*-SA *cuscus*-3SM *singe* -R.PST-3PL-3SM
The villagers having gone, singed the fur off of the cuscus.

['skunɛ̈txañ'moumɨŘ] [ƥɨnaɡañ'moutɨŘ]
Skunët-hañ -më -w -m -r, dɨrk -t, bruk-t, fɨnah -hañ
singe -CONT.*to*-R.PST-IMPF-3PL-3SM *saliva*-3SF *foam*-3SF *arrive*-CONT.*to*
They were singeing off the fur and saliva and foam came out

[me'moum]
-më -w -t -r. May-më -w -m ''wom -m wom këmbru-m save
-R.PST-IMPF-3SF-3SM *say*-R.PST-IMPF-3PL *other*-3PL *other cuscus*-3PL CUS
of his mouth. They were saying, "When one

[niwam]
skunët-thomba-t i no save iñji nay-w -a -m. Nda
singe -SIM -3SF NEG *customary thus do* -IMPERF-PRSUP-3PL *near*.DEM
normally singes fur off of a cuscus they don't do that.

[newɨŘ] [memɛ̈m]
këmbru-rpa iñji nay-w -r.'' Wom -m may-më -m, ''Nhai, rh -ñifhe -
cuscus-only like do -IMPF-3SM *other*-3PL *say*-R.PST-3PL *no sit-day.break*-
Only this cuscus does like this." Others said, "no,

-r -n dɨrk -t, bruk-t, fɨnah -wë -t -r.''
-3SM-G.DEP *saliva*-3SF *foam*-3SF *arrive*-IMPF-3SF-3SM
since it was sitting here until daybreak the saliva and foam came out of his mouth.

Orait skunët-buga-më -m -r orait skunët-buga-hatë-ne
alright singe -all -R.PST-3PL-3SM *alright singe -all* -SA -G.DEP
Alright, they singed the fur all off

rfëtoa-m ningët -hatë wa -hɨta-më -m -r, tas -hañ -më -m -
leaf -3PL *make.bed*-SA ELEV-*put* -R.PST-3PL-3SM *carve.meat*-CONT.*to*-R.PST-3PL-
and having singed the fur all off and then having laid out some leaves, they put

-r, a -sëmbha tu -r fëh -ribig -më -r. Fëh -ribig -hatë,
-3SM *near-place* REF/EMP-3SM MOTION-*split.open*-R.PST-3SM MOTION-*split.open*-SA
it down. They were cutting him up and here he himself split open. When he had

yima -m olgeta-m noh-më -m. Noh-më -m, orait ndɨ yima -r,
person-3PL *all* -3PL *die*-R.PST-3PL *die*-R.PST-3PL *alright* DEM *person*-3SM
split open all of the people died. They died, and then the man who

[mɛ̈ɣɨtəna'yukɨ̌R] [ne^{ə}'ɣatɛ̈]
ndɨ këmbru-r më -hɨta-na -yuk-r nayay-hatë, yhëm-tu -hëmbri -tañ-hatë
DEM *cuscus*-3SM ELEV-*put* -*come*-PUR-3SM *come* -SA ELEV-MOTION-*put.into*-CPL-SA
put the cuscus down, having come, neutralising the spirit's power

rë-r fakrmay -më -r, mëngra-kor than-m rë-m mi -hɨti-më -r.
3 -3SM *run.in.fear*-R.PST-3SM *camp* -AD *wife*-3PL 3 -3PL ELEV-*see* -R.PST-3SM
down there, he ran away. He saw his wife and them down at the camp house.

Mi -hɨti-më -r -m, inap olsem rpa yam -t tëh -tañ-hatë,
ELEV-*see* -R.PST-3SM-3PL *to approximately one month*-3SF *stand*-CPL-SA
He saw them down there and having stayed there approximately one month

[ne^{ə}ɣatɛ̈] [ne^{ə}ɣatɛ̈] [ne^{ə}ɣatɛ̈ne]
tfi nayay-hatë ndɨ kɨmi -t nayay-hatë orait. Nayay-hatë-ne fkoh,
then come -SA DEM *village*-3SF *come* -SA *alright come* -SA -G.DEP *bandicoot*
then having come to the village, having come back, okay. Having come then and

[yakne^{ə}ɣatɛ̈ne]
mërfa yak-nayay-hatë-ne më -tandhi-skunët-hatë-ne më -tandhi-
tree.snake get-come -SA -G.DEP ELEV-*burn* -*singe* -SA -G.DEP ELEV-*burn* -
having gotten a bandicoot, and a tree snake, burning and singeing up there,

[n^{e}'amɛ̈m]
-toun-hatë, em nau. Rë-m nayay-më -m. Më -tëh -më -m ndɨ
-*ash* -SA *okay* 3 -3PL *come* -R.PST-3PL ELEV-*stand*-R.PST-3PL DEM
and having burned them to ashes — okay, then they came, they lived up in

kɨmi -t. Be.
village-3SF *finish*
the village. The end.

The spirit who turned into an animal

I will tell you a legend about a man who went off with a pack of dogs.

In the afternoon the man said to his wife, "When you get up in the morning, fry some sago for me". In the morning his wife got up and fried him the sago. When she had done that he took his dogs and his bow and left.

As he was going along, he picked up pig and cuscus and took them along. He was collecting game for some time as he went along for he did not live near there, he had gone a long way by now. He was collecting pig, bird and cuscus until his string bag was full to the top. With that he arrived at his own camp house at last light, right at dark.

Having arrived, he got his fire making material together, including a split stick and a dried thin strip from a sago frond stem. He then began pulling the strip back and forth across the stick to start a friction fire.

He pulled the strip back and forth across a stick;
Then a spirit up above him pulled a strip across a stick.
First the one down below pulled his strip back and forth;
Then the spirit pulled his strip back and forth.

They continued like that until the man's strip broke and then the spirit's strip broke also. With that the man got another one and began pulling it back and forth across his stick.

He pulled at his;
The one up above pulled at his.

It was like that that the man used up all of the firemaking strips. When he had run out he removed the bow string and used that until it had broken. So, then he decided to feel around for some others.

Feeling around he reached across and brushed against the spirit. Having run into a spirit he was not startled nor did he hesitate wondering what to do then. When he touched him, he simply took his dogs out quietly, barred the door and tied it up with a vine. Having secured the door, that was it; he nudged his dogs cautiously with his arms and feet and left, taking his bow and his string bag full of meat. By then the dusk had melted into the night.

He walked until he was about as far away as Rekin is from Tanganbit (about five hours walk) when the spirit jumped down onto the floor of the house. After jumping to the floor, he went around the house making an awful racket. Finally he broke out through the door and jumped down to the ground. There he began sniffing around for the man's scent. He eventually got the scent and began tracking him.

The man heard him when he got close. Then he opened up his string bag of meat, gave some to his dogs and left some of them there while he himself kept going. The spirit came on the scene and looked down on the dogs. The dogs fought hard with him but he finally tore open their bellies disembowelling them.

After that he again picked up the man's scent and followed after him. Once again the man heard the spirit getting close so he left some more meat, cuscus and pig meat, with some of his other dogs. Again the spirit approached, began fighting with the dogs and disembowelled them. With than the man was down to the last of his dogs and meat. So, he left the last of them and gave

them the rest of the pig and cuscus meat.

He then turned and ran down to a mipr tree. (Mipr trees are very tall). He ran to it and made it up to the very top of the tree where he sat down. In the meantime the spirit came upon the rest of the dogs where he fought with them and disembowelled them. Then he turned to sniff out the scent. He sniffed around and finally got the scent.

Now then, he followed the trail, tracking him over to the huge mipr tree. The spirit ran down to the tree but the man was already prepared with the incantation for shooting spirits. There he was, starting the incantation which activated the magic, up came the spirit. He came nearer and nearer, thinking "I've got it made, just past this last part . . ." when the man shot him with a black palm arrow.

He fell all the way to the ground. After he hit the ground he kept repeating "ragh ragh ragh, come, I have something to tell you". After a while the man consented and came down. The spirit then explained to him black magic for use with arrows, white magic to neutralise spiritual powers, the black magic of black palm leaves and several other incantations and then told the man to take him to the village.

The man got a vine, slung him over his shoulder and took him off to the village. When he got near the village he put him down and left him while he himself went up into the village. There he had a good meal and a leisurely cigarette. Then he revealed to the villagers that he had left a cuscus down below and suggested that they all go down to get it.

After he had spoken to them he left them and told his wife and children to go ahead to the camp house, which they did. The villagers went down and singed the fur off of the cuscus. While they were singeing the cuscus, he started foaming at the mouth, saliva running down his mouth. They were remarking that normally when one singes the hair of a cuscus they don't do that, but only with this one. Others speculated that it had foam and saliva in the mouth because it had been sitting there until daybreak.

They went ahead and singed the fur all off, laid out some leaves on the ground, put it down and began cutting it up. Right then and there the cuscus himself split open and all of the people died on the spot. After they were dead the man who had brought the cuscus came and neutralising the spirit's power he ran away.

He went down to see that his wife and children were safe at the camp. He stayed there with them for approximately one month and then returned to the village. Arriving back there he took a bandicoot and a tree snake, singed them in the fire and burned them to ashes. With that they all came back and lived up in the village.

The End.

NOTE

1. A cuscus is a phalanger, a marsupial resembling the opossum of North America.

INDEX

abbreviations 13
Abelam 49, 61
abstractness 4, 18
accessibility hierarchy 6, 110, 113, 303 note 63, 304 note 67
actor 11, 147, 217-218, 221, 223, 231, 234-236, 243-245, 248, 261, 267, 273, 283, 291
actor person marker 218
address 76
adessive 74, 198, 211, 213, 219
adessive noun phrase 198
adjectival verb 146
adjectival particles 89
adjective 74
adjectives 74, 77, 89, 118, 173-174
    age-human propensity 78
    colour 78
    dimension 78, 79
    physical-property 78-79
    subclasses (Table 24) 78
    value 78
adjective incorporation 173-174
adjective phrase (Table 46) 118
adverbial aspects 161
adverbial clause 284-285, 287, 290
adverbs 74, 87-88
affective 217, 219, 221, 247
agent 216, 218, 221-222, 231-232, 243-244, 246 note 106
agentiveness
    degree of 243
agent-less 195
allative 74, 84, 205, 211, 214, 219
alternate conjunction 130
alternation 255
alternative question 190, 279-280
ambiguity 212
amplification 314 note 133
animacy 7, 307 note 94, 309 note 102
animacy hierarchy 222
animate 309 note 102
antithetical 263
archi-phoneme 298 note 17

archi-segment 298 note 17
aspect 133-135, 160-161
aspiration 71
attribution 257
Au 301 note 42
a-deletion 43
a-dissimilation 40, 47, 64
Bach and Harms 299 note 21
background 141, 173, 258-259, 282-283, 285, 289
Bahinemo 49
basic stem 145
Bella Coola 69
benefactive 153, 158, 228-233, 235
    direct 158-159
    indirect 158-159
Biggs 301 note 39
Blackwater River 1
bleeding rules 47, 300 note 32
Boiken 49
Bolinger 70-72, 301 note 43
Bruce 30, 296 note 2, 299 note 20, 300 note 20, 302 note 47, 304 note 68, 308 note 98
cardinal numerals 102
case 2, 10-11
case frames 224-231, 243
case grammar 6
case markers (Table 87) 196
case marking 6, 195, 210-211, 261
    adessive 198
    actor 218, 221, 261
    allative 205
    instrument 206
    genitive 291
    locative 199, 203-205
    path 199
    referent 200
    setting 203-205
    temporal 204
    undergoer 217, 219, 221, 239
case roles
    adessive 211, 213, 219
    affective 217, 219, 221, 247
    agent 216, 218, 221-222, 231-232, 243-244, 246 note 106
    allative 211, 214, 219
    benefactive 153, 158, 228-233, 235
    controlled experiencer 216, 218, 221, 236, 245, 310 note 110
    efficient cause 211
    elative 211, 219
    experiencer 216, 218-219, 221-222, 231, 235-236, 245, 310 note 110
    force 216, 218, 221-222, 231
    instrument 215-216
    location 213-214, 219, 221, 234, 238, 247, 294
    manner 214
    modal 5, 214

case roles (cont)
orientation 5, 210, 293
participant 216
path 74, 199, 219
patient 216, 218-219, 221, 231, 238, 241
point of reference 211
range 217, 219, 221
referent 217, 219, 221
setting 247
temporal reference 213-214, 219, 221, 234
uncontrolled experiencer 216, 218-219, 221
causative 153, 228-233, 241, 243
direct 156
direct event 155
direct physical 155
indirect 156
causative (Table 70) 155
central diphthongisation 55
central vowels 39
Chafe 78, 100, 258, 302 note 46, 311 note 116
Chipaya 69
Chomsky 93
Clark 310 note 107
classified noun stems 95
clausal processing 311 note 114
clause
adverbial 285
complement 277, 283, 289
dependent 265, 285
embedded 285
equative 181
four-place predicate 232
merged 165
nominal 124, 285
non-final 265
one- or two-place 184
purpose 285
relative 105-115, 141, 172, 259, 284-285, 305
sequential time 287-288
semantics of 210-252
simultaneous time 288
three-place locative 186
time 287-288
truncated 282, 290
two- or-three-place 185
two-place 185
clauses (Table 75) 179
clause level 178, 210
coalescence rules 45-47, 49, 51-53, 56
Cole 157
colour adjectives 78
comitative 74, 201, 213, 251-252
comitative noun phrase
(Table 52) 129
Table 95) 202

communicative dynamism 257-259, 266, 269, 278, 289
comparative 81-82, 268
comparative particles 88
comparison 255, 268
complementation 277, 283, 289-290
complete overlap 20
compound 122
compound NP 251
compound verb 163-164, 167
Comrie 6, 110, 115, 133, 158, 303 note 63, 309 note 102, 313 note 128
conditional 272
conditional sentence (Table 114) 269
conjoining 253
conjunction
    alternative 130
    coordinate 74, 128-129
Conrad 259, 312 note 120
consonants 21, 34
    (Table 3) 21
consonant sequences 56-59, 62, 65-66, 68
content interrogative 141, 188
contingency 255
contraexpectancy 139, 257, 263-264, 275
contrafactual 137, 139, 194, 256, 274, 276
contrafactual sentence (Table 116) 272
contrast 253
contrastive clause (Table 111) 267
controlled experiencer 216, 218, 221, 236, 245, 310 note 110
Cook 5, 223, 306 note 82, 310 note 107
coordinate conjunction 74, 128-129
coordinate noun phrase 128
coordinate sentence 266, 269
coordination 260, 263
copula 74, 82, 91, 126
copular verb (Table 73) 177
copulative clause 181
coreference 291, 293-294
coreferential deletion 291
counting systems 318, 320
    money counting system 320
coupling 253
declaration 188
declarative 132, 136-137, 188
definite 234, 295, 309 note 102, 310 note 108
definiteness 7, 307 note 94
deixis 257
demonstrative 74, 81, 101, 108
demonstratives 82
dependent clause 285
derivations
    phonological 48
derived noun stems 93, 121
derived verb stems 146, 152-153
determiner 99-101

dialects
Karawari 1, 17, 299 note 20
Kuvenmas 1, 2, 17, 299 note 20
Diegueño 62
different actor 295
Dik 260
diphthong 55
direct benefactive 158
direct causative 156, 244, 306 note 83
direct event causative 155
direct instrument 206, 215-216
direct object 5-6, 208, 217, 309 note 100
direct physical causative 155
direct reference personal pronouns (Table 20) 75
directionals 74, 98, 150-151, 306 note 79
dissimilation 299 note 21
Dixon 77-78, 302 note 46, 310 note 107
Dutton 302 note 52
Dye 1, 49
Dye and Dye 49
Dye, Townsend and Townsend 296 note 2
efficient cause 211
elative 211, 219
elevational 74, 98, 150-151, 306 note 79
elevationals (Table 35) 98
elevational prefixes (Table 68) 150
embedded clauses 285
emphatic 74
emphatic-reflexive pronouns 75-76
epenthetic 61, 65-66
equative clause 181
ergative 285
exhaustive quantifier 99
existential verb 177
existential verb (Table 74) 178
expectancy chain 153, 257, 263
experiencer 216, 218-219, 221-222, 231, 235-236, 245, 310 note 110
e-dissimilation 38, 47
ë-i fluctuation 41
e-tensing 38
Faltz 5, 309 note 100
feeding rules 47, 300 note 32
Fillmore 5, 210, 309 note 103, 311 note 116
Firbas 7, 257-258
Foley 7, 311 note 115
Foley and Van Valin 296 note 6
force 216, 218, 221-222, 231
foreground 258, 285
Foreman and Martin 49
four-place predicate 232
Franklin 10, 12, 297 note 11
Frantz 4, 173
fricatives 24-25
fricative articulation assimilation 26

fricative voicing assimilation 25
Fries 302 note 49, 304 note 68
frustrated intention 315 note 134
frustration 314 note 131
future tense 133
geminate 59
gender 97
general dependent clause (Table 109) 265
general setting 74, 84
generative phonology 3-4, 18
generic 152, 171-172
genitive 106, 111, 113, 124
genitive case marking 291
giveness 7
Givón 294-295
glottal 71
Glover 297 note 9
grammatical hierarchy 93
grammatical levels 131, 302 note 53
grammatical roles 223
Greenberg 2, 69, 119
Grimes 5, 223, 258-259
Haberland 2, 296 notes 3 and 4
Hale 5, 10-11, 19, 51, 217
Halle 69
Halliday 223, 296 note 6
Hawkinson 7
high-central vocoid 61, 67
high-front coalescence 45, 47
high-front diphthongisation 55
Hockett 69
Hooper 3-4, 18-19
Hopper and Thompson 223-224, 238
hortative 132, 136-137, 139-140, 270-271, 273-276
hortative discourse 284
how 80-81
Huttar 93
Hyman 7, 30
hypothetical 137, 272
hypotheticality 138, 255, 270, 274-275
Iatmul 49
idiom 164, 167
illocutionary force 261, 271, 274
illustration 256, 314 note 132
immediate past tense 133, 272
imperative 132, 136-137, 139, 270-271, 274
imperfective 135
implication 255
inalienable possession 170, 223, 239-242, 249
inchoative 151
indefinite reference 98
indirect object 5-6, 208, 217
indirect reference third person pronouns (Table 22) 75
infinitive 277, 283-284, 289

infinitive complement 289-290
inner modifier 99
inner object 4-5, 11, 180, 207, 209, 217, 220, 222-223, 234, 239, 248
instrument 74, 82
    direct 206, 215-216
    indirect 206, 215
    manner instrument 207, 215
interior location 213, 219
interjections 89
interpretation 32
interrogative 2, 74, 79-82, 280, 308 note 96
    alternative 190
    content 141, 188
    leading 190
    neutral 71, 190, 301 note 44
    rhetorical 191
interrogatives 118
    how 80-81
    what 79, 81
    when 80
    where 80
    where to 80
    which 79
    who 79
    whose 80
    why 80
interrogatives (Table 25) 80
intonation 70, 261, 289, 301 note 43, 302 note 54, 312 note 122
irrealis 132, 136-139, 270-274, 276, 305 note 73
irregular verbs 146
ɨ-assimilation 42
ɨ-epenthesis 57, 65
ɨ-harmony 42
i-tensing 37
Jespersen 303 note 60
Johnston 312 note 121
juncture 61
Kabardian 69
Kalam 61, 65, 69-70, 301 note 39
Karawari dialect 1, 17, 299 note 20
Karawari River 1, 16-17, 296 note 1
Keenan 6, 110, 115, 173, 303 note 63, 307 note 88
kinship 9, 74, 76, 82-83, 302 note 47
Kiparsky 51-52, 300 note 32
Kirschbaum 322
Kuipers 69
Kuno 311 note 115, note 116
Kuvenmas dialect 1-2, 17, 299 note 21
Kuvenmas lake 1
Langdon 62
Laycock 49, 61, 301 note 39, 321
Leech 309 note 103
legend story 323

Lendu 69
limiter 99, 126
location 82, 213-214, 219, 221, 234, 238, 247, 294
locative 74, 85, 199, 203-205, 221, 223-234, 238, 247
locatives 83-84
locative (Table 29) 83
logical relations
    alternation 255
    amplification 314 note 133
    attribution 251
    comparison 255, 268
    conjoining 253
    contraexpectancy 139, 257, 263-264, 275
    contrafactual 137, 139, 194, 256, 274, 276
    contrast 253, 267
    coupling 253
    deixis 257
    exception 312 note 123
    frustration 314 note 131, 315 note 134
    hypotheticality 137-138, 255, 270, 272, 274-275
    illustration 256, 314 note 132
    implication 255
    paraphrase 256, 277
    proportions 255
    temporal 86-87, 204, 234, 255, 263
    universal quantifier 255
    warning 313
Longacre 4-5, 7, 10, 89, 92, 153, 217, 224, 252-257, 259, 268, 296 note 6, 297 note 10, 302 note 53, 305 note 74, 310 note 105, 311 note 117, 312 note 123, 313 note 129
Lord 4, 153
low-front coalescence 46-47, 51-52, 56
Lyons 77, 89-90, 93, 195
Manambu 49
manner 214
manner instrument 207, 215
maps 16-17
Maramuni 322
marked yes-no questions 72
Mathesius 258
Matthews 89-90, 302 note 54
Mayo 49
McLendon 310 note 107
merged clause 165
Merrifield 297 note 11
mid-back coalescence 46
mid-front coalescence 46-47, 49
mid-peripheral diphthongisation 55
Miller and Johnson-Laird 258
modal roles 5, 214
mode 135, 137, 139-140
modifier 99
money counting system 320
morphophonemics 4, 22

morphophonemic rules 298 note 17
Mt. Arapesh 312 note 120
Mt. Koiari 302 note 52
nasals 25
nasal assimilation 27
natural generative phonology 3, 19
near past tense 133
negation particles 88
negative 169, 191, 193, 267, 271-274, 276, 278
negatives 88, 278
negative clauses (Table 86) 192
negative evaluation 191
neutral question 71, 190, 301 note 44
Newman 69
New Guinea Pidgin 70, 304 note 70
new information 258-260
Ngala 49
nominal 146
nominal clause 285
nominal clause (Table 49) 124
non-final clause 108, 265
non-finite verb 176
non-possessed 74, 91, 105, 114-115
non-specific 152, 171-172
noun incorporation 4, 105, 109, 112, 131, 152, 170-173, 285
noun phrase 89-90, 95
noun phrase accessibility hierarchy 6, 110, 113, 303 note 63, 304 note 67
noun phrase base 98
    nucleus 99
noun phrase base (Table 36) 99
noun stem 93-95
noun stem (Table 31) 94
nouns 79ff
numerals 74, 87, 318-321
    cardinal 102
    ordinal 102, 104
object 2
object agreement 310 note 108
old information 258-259
Olson 69, 296 note 6
one- or two-place clause 184
onomatopoeic 164
ordinal numerals 102, 104
ordinal (Table 39) 104
orientation roles 5, 210, 293
outer modifier 104-105
outer object 4-5, 11, 180, 207, 209, 217, 239, 248
outer object NP 220
o-shortening 39
palatal alveolars 28
palatal assimilation 29, 47
paradigmatic coherence 51-52
paraphrase 256, 277
participant roles 216

particle 74
particles
    adjectival 89
    comparative 88
    interjections 89
    negation 88
    negative 88, 278
passive 308 note 98
path 74, 199, 219
patient 216, 218-219, 221, 231, 238, 241
Pawley 61, 65, 69-70, 301 note 39
perfective 133-134
perfect tense-aspect 272
person-number-gender markers 74, 91, 147, 149, 218, 240, 243, 283, 285, 293
person-number-gender markers (Table 34) 96
perspective 248, 251-252, 311 note 116
phoneme 4
phonetic features 23, 36, 297 note 12
Phonological derivations 48
phonological rules
    a-deletion 43
    a-dissimilation 40, 47, 64
    bleeding 47, 300 note 32
    central diphthongisation 55
    coalescence 45-47, 49, 51-53, 56
    derivations (Table 10) 48
    e-dissimilation 38, 47
    e-tensing 38
    ë-ɨ fluctuation 41
    feeding 47
    fricative articulation assimilation 26
    fricative voicing assimilation 25
    high-front coalescence 45, 47
    high-front diphthongisation 55
    i-tensing 37
    ɨ-assimilation 42
    ɨ-epenthesis 57, 65
    ɨ-harmony 42
    low-front coalescence 46-47, 51-52, 56
    mid-back coalescence 46
    mid-front coalescence 46-47, 49
    mid-peripheral diphthongisation 55
    nasal assimilation 27
    o-shortening 39
    palatal assimilation 29, 47
    rounding assimilation 41
    rule ordering 47
    tap voicing 27
    tense-rounding assimilation 41, 47, 53
    w-lowering 28
    y-deletion-1 44, 47, 51, 56
    y-deletion-2 44, 47
    y-epenthesis 43, 54
    y-syllabification 44

phonology
abstractness 4, 18
aspiration 71
Bolinger 70
central vowels 39
complete overlap 20
consonants 21, 34
consonant sequences 56-59, 62, 65-66, 68
consonants (Table 3) 35
epenthetic 61, 65-66
fricatives 24-25
geminate 59
glottal 71
high central vocoid 61, 67
intonation 70
juncture 61
nasals 25
paradigmatic coherence 51-52
phonetic features 36
phonotactics 54, 62
prenasalised stops 33-34
questions, marked yes-no 72
questions, neutral yes-no 71
reinterpretation 50, 52
segmental 21ff
stops 21-24, 28-29
stress 62, 67
syllable 59
syllable boundaries 59, 61, 66
syllable structure 59
syllable types (Table 17) 60
taps 25
transition 61-62, 66, 68, 81
vowel sequences 55
vowel sequences (Table 16) 54
vowel-less words 67-69
vowels 34
vowels (Table 6) 34
phonotactics 43, 54, 62, 297 note 14
phrase 93
phrase base 91, 93
phrase clitic 96
phrase level 89-90
physical property adjective 78-79
Pike, E. 30, 49
Pike, K. 3, 10, 18-19, 30, 49, 61, 68-69, 89-90, 296 note 6, 297 note 9, 301 note 38
Pike and Pike 93, 296 note 6, 297 note 8
Pittman 69
point of reference 211
polarity 191
polite imperative 139
positionals 84-85
possessed 74, 91

possessive 74, 82
possessive phrase 2, 116
possessive phrase (Table 45) 117
possessive phrase (Table 43) 115
pragmatics 248, 307 note 95
prenasalised 33-34, 298 note 17
present tense 133
presupposed 312 note 119
presupposition marker 109, 132, 134, 140-141, 259, 264, 280-281, 305 note 73
presupposition mood 109, 132, 134, 140-141, 259, 264, 280-281, 305 note 73
procedural discourse 284
process 147
process derivational 74
pronominal person marker 218, 240, 243, 283, 285, 293
pronouns 74-75, 126
pronoun phrase (Table 50) 126
proper names 126
proportions 255
proximity 74, 81
purpose 287
purpose clause 2, 285, 287, 289
purpose-relative clause 105, 111
purpose-relative clause (Table 41) 112
purpose verb 112-113
quantifier 74, 99, 102
    exhaustive 99
quantifier floating 173
questions (cf. interrogative)
quotation 264, 278-279, 284, 315 note 134
range 217, 219, 221
realis 132, 136-137
reality 135
real question 190
reciprocal 153, 228-231, 233, 235, 237
reconstruction 69
referent 74, 84, 200, 217, 219, 221
referentiality 7, 11, 248-249, 295, 304 note 66, 308 note 95
referentially prominent 251, 295
referential structure 6
reflexive 228-231, 233, 235, 237, 246
reflexive pronouns 76
reflexive (Table 23) 75
reinterpretation 50, 52
relative clause 2, 141, 172, 259, 284-285, 305 note 75
    general 105-110
    (non-)possessed 115
    purpose 105, 111-112
relativisation 110, 249, 311 note 115
relativisation strategy 106, 115
relativiser 108
remote past tense 133
rhetorical predicate 194
rhetorical questions 191
role hierarchy 221-223, 291

role structure 243, 290,
modal 5, 214
orientation 5, 210, 293
participant 216
Ross 252
rounding assimilation 41
rule ordering 47
Saksena 310 note 106
Salish 69
same actor 295
Sapir 4, 152
Schachter 296 note 6, 311 note 116
Scorza 301 note 42
secondary word stress 301 note 40
segmental phonology 21
semantic hierarchy 297 note 9
semantics 5, 7, 56, 78, 155-160, 210-285, 290, 301 note 37
sentence 252-285
sentence level 252
sentence types (Table 105) 260
Sepik Hill 1, 16, 296 note 1
sequential time clause 288
serial verbs 2, 4, 152-153, 164-165, 167, 173, 176, 232, 243, 272
case frames 243
constraints 167
setting 203-205, 247
Shibatani 158, 306 note 83
simile 276-277
simultaneity 263
simultaneous time clause 287-288
social groups 1
Sommerstein 18
SOV 119
specific setting 74
Staalsen 49
stem-level 92
stops 21-24, 28-29
stress 62, 67, 301 note 40
subject 2, 4, 6, 11, 180, 207-208, 217, 249, 267
features of 249-252
subject-less sentence 187, 195
subject properties 249-252
subordinate clause 271
illocutionary force 271
subordination 260-261, 265, 270-271, 277-283
Sugita 310 note 107
Sumariup 69
surface location 213-214, 219
suspend-processing clitic 247-248
switch reference 6, 109, 249, 264, 280, 288, 293, 315 note 137
different actor 295
same actor 295
syllable 59
syllable boundaries 59, 61, 66

syllable structure 59
syllable types (Table 17) 60
syntactic doubling 232
tagmeme 8-12
tagmemics 3-4, 7-9, 89, 253, 296 note 6, 297 note 11
tally system 102, 104, 321
Tannenhaus and Carroll 311 note 114
taps 25, 27
tap voicing rule 27
temporal 255, 263
temporal phrase 87
temporal phrase (Table 30) 86
temporal reference 204, 213-214, 219, 221, 234, 306
temporals 85-87
temporal succession 263
tense-aspect 132
tense-rounding assimilation rule 41, 47, 53
terms of address 76
text 323
Thompson 305 note 74, 315 note 136
Thompson and Longacre 261, 271, 312 note 119
three-place locative clause 186
time 74, 82, 85
time word incorporation 176
topic 267, 295, 308 note 95, 312 note 121
topicality 7
topicaliser 248
Townsend 1
transformational generative grammar 9
transition 61-62, 66, 68, 81
transitiviser 310 note 110
transitivity 180, 223-224, 228-230, 234-239, 310 note 107
Travnicek 258
truncated clause 282, 290
two-place clause 185
two- or three-place clause 185
uncontrolled experiencer 216, 218-219, 221, 236-237, 245
undergoer 11, 147, 217, 221-223, 231, 234-236, 238-239, 241, 243-246, 283, 291
undergoer person marker 219
universal grammar
    direct object 309 note 100
universal quantifier 255
vagueness 212
value adjectives 78
Van Valin 7
Van Valin and Foley 296 note 6
verb 74, 130
    agreement 217, 240, 251-252, 294, 310 note 104
    conjugations 142, 299 note 25
    conjugations (Table 60) 144
    paradigms 316
    phrase (Table 54) 131
    reciprocal 160
    reduplication 164
    stem (Table 69) 154

verbal pronominal person markers 147
verbal pronominal person markers (Table 65) 149
verbs 145-147, 153, 158, 224
villages 1, 17
vocative 74, 76
voice 142, 195
vowels 34-40
vowels (Table 6) 34
vowel-less words 67-69
vowel sequences 55
vowel sequences (Table 16) 54
Wagupmeri River 1, 16-17
warning 313 note 129
Waterhouse 296 note 6
what 79, 81
when 80
where 80
where to 80
which 79
who 79
whose 80
why 80
Woo 301 note 43
word-level 89-90
word classes 73-74
     Table 20 74
word order 2, 119, 188, 249, 290, 307-308 note 95
Wurm 301 note 39, 322
w-lowering 28
Yelogu 49
yes-no interrogative 188
y-deletion-1 44, 47, 51, 56
y-deletion-2 44, 47
y-epenthesis 43, 54
y-syllabification 44
Zubin 258, 296 note 6, 311 note 115

BIBLIOGRAPHY

The following abbreviations are used in the bibliography:

AmA	*American Anthropologist*
IJAL	*International Journal of American Linguistics*
IULC	*Indiana University Linguistics Club*
LIN	*Linguistic Inquiry*
LLWP	*Languages and Linguistics Working Papers*
OL	*Oceanic Linguistics*
PBLS	*Proceedings of the ... Annual Society of the Berkeley Linguistics Society*
PCLS	*Proceedings of the Chicago Linguistic Society*
PL	*Pacific Linguistics*
SAfrL	*Studies in African Linguistics*
SIL	*Summer Institute of Linguistics*
SILP	*Summer Institute of Linguistics Publications in Linguistics and Related Fields*
SS	*Slovo a slovesnost. Prague.*
TLP	*Travaux Linguistiques de Prague*

ANTTILA, Raimo

1972 *An introduction to historical and comparative linguistics.* New York: Macmillan.

AUSTIN, Peter

1978 A grammar of the Diyari language of north-east South Australia. Ph.D. thesis, The Australian National University, Canberra.

BACK, Emmon W. and Robert T. Harms

1972 How do languages get crazy rules? In Stockwell and Macaulay, eds 1972:1-21.

BACH, Emmon W. and Robert T. HARMS, eds

1968 *Universals in linguistic theory*. New York: Holt, Rinehart and Winston.

BEE, Darlene and Alan PENCE

1962 Toward standardization of a survey word list for Papua and New Guinea. *Oceania Language Monographs* 6:64-75.

BOLINGER, Dwight

1977 Pronouns and repeated nouns. Mimeo. Reproduced by IULC, Bloomington, Indiana.

1978 Intonation across languages. In Greenberg, ed., vol.2: *Phonology*, 471-524.

BOTHA, Rudolf P.

1970 *The methodological status of grammatical argumentation*. Janua Linguarum, Series minor, 105. The Hague: Mouton.

BRUCE, K.L.

1973 Alamblak morpheme concordance. Computer printout, Linguistic Information Retrieval Project of the Summer Institute of Linguistics and the University of Oklahoma Research Institute. Norman, Oklahoma.

BRUCE, L.P.

1972 Alamblak tentative phonemic statement. MS. SIL, Ukarumpa.

1974a Alamblak kinsmen: To give is better than to receive (and you'll get it back). In R.D. Shaw, ed. *Kinship studies in Papua New Guinea*, 169-186. Ukarumpa, Papua New Guinea: Summer Institute of Linguistics.

1974b Alamblak passivity. *Kivung* 7/3:178-198.

1975 Alamblak alveopalatals — dead portmanteaus. *Papers in New Guinea Linguistics* 18. *PL*, A-40:91-102.

1979 A grammar of Alamblak (Papua New Guinea). Doctoral dissertation, The Australian National University, Canberra.

BRUCE, L.P. and Kathleen L. BRUCE

1971 Alamblak verb classes. MS. SIL, Ukarumpa.

CHAFE, W.L.

1970 *Meaning and the structure of language*. Chicago: University of Chicago Press.

1976 Givenness, contrastiveness, definiteness, subjects, topics and point of view. In Li, ed. 1976:25-55.

CHOMSKY, Noam

1964a On the notion 'rule grammar'. In Fodor and Katz, eds 1964:119-136.

1964b Degrees of grammaticalness. In Fodor and Katz, eds 1964:384-389.

1965 *Aspects of the theory of syntax*. Cambridge: M.I.T. press.

CHUNG, Sandra

1972 On conjunct splitting in Samoan. *LIN* 3/4:510-516.

CLARK, Ross

1973 Transitivity and case in Eastern Oceanic languages. *OL* 12:559-605.

COLE, Peter

n.d. The grammatical role of the causee in universal grammar. MS. University of Illinois, Urbana, Illinois.

COLE, Peter and Jerrold M. SADOCK, eds

1977 *Syntax and semantics*, vol.8: *Grammatical relations*. New York: Academic Press.

COMRIE, Bernard

1974 Causatives and universal grammar. *Transactions of the Philological Society*, 1-32. Oxford.

1976a *Aspect*. Cambridge: Cambridge University Press.

1976b The syntax of action nominals: a cross-language study. *Lingua* 40:177-201.

1978 Lecture notes from the 1978 Linguistic Institute of the Linguistic Society of America, University of Illinois, Urbana, Illinois.

1979 Definite and animate direct objects: a natural class. *Linguistica Silesiana* 3:13-21. Prace Naukowe Uniwersytetu Slaskiego Nr 271. Katowyce.

CONRAD, Robert J.

1973 Mt. Arapesh (Bukiyūp) sentences. MS. SIL, Ukarumpa.

CONRAD, Robert J. and Wayne DYE

1975 Some language relationships in the Upper Sepik region of Papua New Guinea. *Papers in New Guinea Linguistics* 18. *PL*, A-40:1-35.

COOK, Kenneth W.

1978 The mysterious Samoan transitive suffix. *PBLS* 4:53-66.

COOK, Walter A.

1969 *Introduction to tagmemic analysis*. Transatlantic Series in Linguistics. New York: Holt, Rinehart and Winston.

1971 Improvements in case grammar 1970. *LLWP* 2:10-22. Washington: Georgetown University Press.

1972 A set of postulates for case grammar analysis. *LLWP* 4:35-49. Washington: Georgetown University Press.

DIK, Simon C.

1968 *Coordination: its implications for the theory of general linguistics*. Amsterdam: North-Holland.

DIXON, R.M.W., ed.

1976 *Grammatical categories in Australian languages*. Linguistic series no.22. Canberra: Australian Institute of Aboriginal Studies/New Jersey: Humanities Press.

DIXON, R.M.W., ed.

1977a *A grammar of Yidiɲ*. Cambridge: Cambridge University Press.

1977b Where have all the adjectives gone? *Studies in Language*, 1/1:19-80. Amsterdam.

DUTTON, T.E., ed.

1975 *Studies in languages of central and south-east Papua*. *PL*, C-29.

DYE, W. and S. DYE

1965 Gahom phonology. MS. SIL, Ukarumpa.

1967 Gahom essentials for translation. Part One: Grammar. MS. SIL, Ukarumpa.

1969 New interpretations of Bahinemo (Ghaom) phonology. MS. SIL, Ukarumpa.

DYE, W., P. TOWNSEND and W. TOWNSEND

1968 The Sepik Hill languages: a preliminary report. *Oceania* 39/2:146-156.

FALTZ, Leonard M.

1978 On indirect objects in universal syntax. *PCLS* 14:76-87.

FIENGO, Robert

1977 On trace theory. *LIN* 8/1:35-61.

FILLMORE, Charles J.

1968 The case for case. In Bach and Harms, eds 1968:1-88.

1975 1971 Santa Cruz lectures on deixis. Reproduced by IULC, Bloomington, Indiana.

1977 The case for case reopened. In Cole and Sadock, eds 1977:59-81.

FIRBAS, Jan

1964 On defining the theme in functional sentence analysis. *TLP* 1:267-280.

FODOR, Jerry A. and Jerrold J. KATZ

1964 *The structure of language: readings in the philosophy of language*. Englewood Cliffs, New Jersey: Prentice-Hall.

FOLEY, W.A.

1976 Inherent referentiality and language typology. Seminar, The Australian National University, October 1976.

FOLEY, William A. and Robert D. VAN VALIN, Jr

1977 On the viability of the notion of "subject" in universal grammar. *PBLS* 3:293-320.

forth- *Role and reference grammar*.
coming

FOREMAN, Velma

1974 *Grammar of Yessan-Mayo*. Language data: Asian-Pacific series no.4. Santa Ana, California: Summer Institute of Linguistics.

FOREMAN, Velma M. and Helen Marten

1973 *Grammar of Yessan-Mayo*. Language Data Asian-Pacific Series 4. Dallas, Texas: Summer Institute of Linguistics.

FRANKLIN, Karl J.

1969 A grammar and dialect study of Kewa, New Guinea. Ph.D. thesis, The Australian National University, Canberra. Published as:

1971 *A grammar of Kewa, New Guinea*. *PL*, C-16.

FRANTZ, Donald G.

1971 *Toward a generative grammar of Blackfoot*. *SILP* 34. Norman, Oklahoma: Summer Institute of Linguistics of the University of Oklahoma.

FRIES, Peter H.

1970 *Tagmeme sequences in the English noun phrase*. *SILP* 36. Norman: Summer Institute of Linguistics of the University of Oklahoma.

GARY, Judith Olmsted and Edward Louis KEENAN

1976 *Grammatical relations in Kinyarwanda and universal grammar*. Reproduced by IULC, Bloomington, Indiana. Mimeo.

GIVÓN, Talmy

1976 Topic, pronoun, and grammatical agreement. In Li, ed. 1976:149-188.

GLOVER, Warren W.

1974 *Sememic and grammatical structures in Gurung (Nepal)*. *SILP*. Kathmandu, Nepal: University Press, Tribhuvan University, Kirtipur.

GREENBERG, Joseph H.

1962 Is the vowel-consonant dichotomy universal? *Word* 18:73-81.

1963 Some universals of grammar with particular reference to the order of meaningful elements. In Greenberg, ed. 1963:73-113.

GREENBERG, Joesph H., ed.

1963 *Universals of language*. Cambridge, Mass. The M.I.T. Press.

1978 *Universals of human language*. Stanford, California: Stanford University Press.

GRIMES, Joesph E.

1975 *The thread of discourse*. Janua Linguarum 207. The Hague: Mouton.

GRINDER, J.

1969 Conjunct splitting in Samoan. *Linguistic Notes from La Jolla* 2. University of California at San Diego.

HABERLAND, Eike Mainz

1966 *Zur Ethnographie der Alfendio-Region (südlicher Sepik-Distrikt, Neuguinea)*. In *Jahrbuch des Museums für Völkerkunde zu Leipzig* 23: 33-67. Berlin: Akademie.

HABERLAND, Eike and Siegfried SEYFARTH

1974 *Die Yimar am oberen Korowori (Neuguinea)*. Wiesbaden: Steiner.

HALE, Austin

1974 On the systematization of Box 4. In Ruth Brend, ed. *Advances in tagmemics*, 55-74. Amsterdam: North-Holland.

HALE, Kenneth

1973 Deep-surface canonical disparities in relation to analysis and change: an Australian example. In Thomas A. Sebeok, ed. *Current trends in linguistics*, vol.II: *Diachronic, areal, and typological linguistics*, 401-458. The Hague: Mouton.

HALLE, Morris

1959 *The sound pattern of Russian*. The Hague: Mouton.

1970 Is Kabardian a vowel-less language? *Foundations of language* 6/1:95-103.

HALLIDAY, M.A.K.

1970 Language structure and language function. In John Lyons, ed. *New Horizons in linguistics*, 140-165. Ringwood, Victoria: Penguin, Australia.

HAWKINSON, A. and L. HYMAN

1974 Hierarchies of natural topic in Shona. *SAfrL* 5:147-170.

HEALEY, Alan

1964 The Ok Language Family in New Guinea. Ph.D. thesis, The Australian National University, Canberra.

HOCKETT, Charles F.

1955 *A manual of phonology*. *IJAL* 21/4(1), Memoir 11. Baltimore: Waverly Press.

HOENIGSWALD, Henry M.

1960 *Language change and linguistic reconstruction*. Chicago: The University of Chicago Press.

1963 Are there universals of linguistic change? In Greenberg, ed. 1963: 23-41.

1966 Criteria for the subgrouping of languages. In H. Birnbaum and J. Puhvel, eds *Ancient Indo-European dialects. Proceedings of the Conference on Indo-European Linguistics Held at the University of California, Los Angeles, April 25-27, 1963*, 1-12. Los Angeles: University of California Press 1966.

HOOPER, Joan B.

1975 The archi-segment in natural generative phonology. *Language* 51/3: 536-560.

1976 *An introduction to natural generative phonology*. New York: Academic Press.

HOPPER, Paul J. and Sandra A. THOMPSON

1980 Transitivity in syntax and discourse. *Language* 56/2:251-299.

HUDDLESTON, Rodney

1971 The syntagmeme. *IJAL* 37/1:39-44.

HUDSON, R.A.

1976 *Arguments for a non transformational grammar*. Chicago: University of Chicago Press.

HUTTAR, George L.

1973 On distinguishing clause and sentence. *Linguistics* 105:69-82.

HYMAN, Larry M.

1975 *Phonology, theory and analysis*. New York: Holt, Rinehart and Winston.

JACKENDOFF, Ray

1975 "Tough" and the trace theory of movement rules. *LIn* 6/3:437-447.

JESPERSEN, Otto

1976 *Essentials of English grammar*. University of Alabama Press. (1st edn 1933, London.)

JOHNSON, David E.

1976 Toward a theory of relationally-based grammar. Mimeo. Reproduced by IULC, Bloomington, Indiana.

1977 On relational constraints on grammars. In: Cole and Sadock, eds 1977:151-178.

JOHNSTON, Raymond L.

1978 Nakanai syntax. Ph.D. thesis, The Australian National University, Canberra. Published as:

1980 *Nakanai of New Britain: the grammar of an Oceanic language*. *PL*, B-70.

KAC, Michael B.

1977 *Corepresentation of grammatical structure*. London/Minneapolis: Croom Helm.

KATZ, Jerrold J. and Paul M. POSTAL

1964 *An integrated theory of linguistic descriptions*. Research monograph 26. Cambridge: M.I.T. Press.

KEENAN, Edward L.

1976 Towards a universal definition of "subject". In Li, ed. 1976:303-333.

KEENAN, Edward L. and Kent D. BIMSON

1975 Perceptual complexity and the cross-language distribution of relative clause and NP-question types. *Papers from the Parasession on functionalism*, April 17, 1975, 253-259. Chicago: CLS.

KEENAN, Edward L. and Bernard COMRIE

1977 Noun phrase accessibility and universal grammar. *LIn* 8/1:63-99.

KILHAM, Christine A.

1974 Thematic organization of Wik-Munkan discourse. Ph.D. thesis, The Australian National University, Canberra. Published as:

1977 *Thematic organization of Wik-Munkan discourse*. *PL*, B-52.

KIPARSKY, Paul

1968 Linguistic universals and linguistic change. In Bach and Harms, eds 1968:171-202.

1972 Explanation in phonology. In Peters, ed. 1972:189-227.

KIRSCHBAUM, F.

1938 Über Zahlensysteme in Zentralgebirge von Neuguinea. *Anthropos* 33:278-279.

KOOYERS, Orneal, Martha KOOYERS and Darlene BEE

1971 The phonemes of Washkuk (Kwoma). *Te Reo* 14:37-41.

KUIPERS, Aert H.

1960 *Phoneme and morpheme in Kabardian (eastern Adyghe)*. Janua Linguarum Studia Memoriae Nicolai Van Wijk Dedicata edenda curat Cornelis H. van Schooneveld. The Hague: Mouton.

KUNO, Susumu

1975 Three perspectives in the functional approach to syntax. *Papers from the Parasession on functionalism*, April 17, 1975; 276-336. Chicago: CLS.

1976 Subject, theme, and the speaker's empathy - a reexamination of relativization phenomena. In Li, ed. 1976:417-444.

LANG, Adrianne

1973 *Enga dictionary with English index*. *PL*, C-20.

LANGDON, Margaret

1970 *A grammar of Diegueño: the Mesa Grande dialect*. University of California Publications in Linguistics 66. Berkeley: University of California Press.

LAYCOCK, D.C.

1965 *The Ndu language family (Sepik District, New Guinea)*. *PL*, C-1.

1973 Sepik languages — checklist and preliminary classification. *PL*, B-25.

1975 Observations on number systems and semantics. In Wurm, ed. 1975: 219-233.

LEECH, Geoffrey N.

1969 *Towards a semantic description of English*. London: Longmans.

LEWIS, R. and S. LEWIS

1970 Tentative phonemic statement: Sanio-Hiowɨ. MS. SIL, Ukarumpa.

1972 Essentials for translation Part I: Grammar of Sanio. MS. SIL, Ukarumpa.

LEWIS, Sandra C.

1972 Sanio-Hiowe verb phrases. *Papers in New Guinea Linguistics* 15. *PL*, A-31:11-22.

LI, Charles N., ed.

1976 *Subject and topic*. New York: Academic Press.

LI, Charles N. and Sandra A. THOMPSON

1976 Subject and topic: a new typology of language. In Li, ed. 1976: 457-489.

LONGACRE, R.E.

1964 *Grammar discovery procedures*. Janua Linguarum, series minor. The Hague: Mouton.

1965 Some fundamental insights of tagmemics. *Language* 41/1:65-76.

1976 *An anatomy of speech notions*. Lisse: The Peter De Ridder Press.

LORD, Carol

1973 Serial verbs in transition. *SAfrL* 4/3:269-296.

LYONS, John

1968 *Introduction to theoretical linguistics*. Cambridge: Cambridge University Press.

MARDIRUSSIAN, Galust

1975 Noun incorporation in universal grammar. *PCLS* 11:383-389.

MATHESIUS, V.

1939 O tak zvaném aktuálním členění větném [on the so-called functional sentence perspective]. *SS* 5:171-174.

MATHEWS, P.H.

1974 *Morphology, introduction to the theory of word-structure*. Cambridge: Cambridge University Press.

McELHANON, K.A.

1970 The Selepet language within the Finisterre-Huon Phylum (New Guinea). Ph.D. thesis, The Australian National University, Canberra.

McELHANON, K.A. and C.L. VOORHOEVE

1970 *The Trans-New Guinea Phylum: explorations in deep-level genetic relationships*. *PL*, B-16.

McLENDON, Sally

1978 Ergativity, case, and transitivity in Eastern Pomo. *IJAL* 44/1:1-9.

MERRIFIELD, William R.

1967 On the form of rules in a generative grammar. *Monograph Series on Languages and Linguistics* 20:43-55. Washington: Georgetown University.

MILLER, George A. and Philip N. JOHNSON-LAIRD

1976 *Language and perception*. Cambridge: The Belknap Press of Harvard University Press.

NEWMAN, S.S.

1947 Bella Coola I: Phonology. *IJAL* 13/3:129-134.

OLSON, M.

1976 Subject properties in Barai. MS. SIL, Ukarumpa.

1978 Switch-reference in Barai. *PBLS* 4:140-156.

OLSON, Ronald D.

1967 The syllable in Chipaya. *IJAL* 33/4:300-304.

PARRET, Herman

1974 *Discussing language*. The Hague: Mouton.

PAWLEY, Andrew K.

1966 The structure of Karam: a grammar of a New Guinea Highlands language. Ph.D. thesis, Department of Anthropology, University of Auckland.

1975 The relationships of the Austronesian languages of Central Papua: a preliminary study. In Dutton, ed. 1975:3-105.

PETERS, Stanley, ed.

1972 *Goals of linguistic theory*. Englewood Cliffs: Prentice-Hall.

PIKE, Eunice V.

1964 The phonology of New Guinea Highlands languages. *AmA* 66/4: *Special Publication: New Guinea, the Central Highlands*, 121-132.

PIKE, Kenneth L.

1947 *Phonemics: a technique for reducing languages to writing*. Ann Arbor: University of Michigan Press.

1964 Discourse analysis and tagmeme matrices. *OL* 3:5-25.

1967 *Language in relation to a unified theory of the structure of human behavior*. Janua Linguarum studia memoriae Nicolai Van Wijk Dedicata edenda curat C.H. Van Schooneveld, Series maior XXIV. The Hague: Mouton.

1976 Toward the development of tagmemic postulates. In R. Brend and K.L. Pike, eds *Tagmemics*, vol.2: *Theoretical discussion*, 91-127. Trends in linguistics. Studies and monographs 2. The Hague: Mouton.

PIKE, Kenneth L. and Evelyn G. PIKE

1977 *Grammatical analysis*. *SILP* 53. Dallas, Texas: SIL and University of Texas at Arlington.

PITTMAN, Richard S.

1963 Review of Aert H. Kuipers *Phoneme and morpheme in Kabardian (eastern Adyghe)*. *Language* 39/2:346-350.

POSTAL, Paul M.

1968 *Aspects of phonological theory.* New York: Harper and Row.

1972 The best theory. In Peters, ed. 1972:131-170.

ROSENBAUM, Peter S.

1967 *The grammar of English predicate complement constructions.* Research Monograph 47. Cambridge, Mass.: The M.I.T. Press.

ROSS, John R.

1967 Constraints on variables in syntax. Ph.D. dissertation, M.I.T., Cambridge.

SAKSENA, Anuradha

1980 The affected agent. *Language* 56/4:812-826.

SAPIR, Edward

1911 The problem of noun incorporation in American languages. *AmA* 13:250-282.

SCHACHTER, Paul

1974a A non-transformational account of serial verbs. *SAfrL,* supplement 5, 1974:253-270.

1974b Serial verbs as verbs: a reply to a reply. *SAfrL,* supplement 5, 1974:278-282.

1976 The subject in Philippine languages: topic, actor, actor-topic, or none of the above? In Li, ed. 1976:491-518.

1977 Reference-related and role-related properties of subjects. In Cole and Sadock, eds 1977:279-306.

forthcoming Parts-of-speech systems. In Anderson et al., eds forthcoming: Chapter II:1-100.

SCHANE, Sanford A.

1971 The phoneme revisited. *Language* 47/3:503-521.

SHAW, R. Daniel, ed.

1974 *Kinship studies in Papua New Guinea.* Ukarumpa, Papua New Guinea: Summer Institute of Linguistics.

SHIBATANI, Masayoshi

1976 The grammar of causative constructions: a conspectus. In M. Shibatani, ed. *Syntax and semantics,* vol.6: *The grammar of causative constructions,* 1-40. New York: Academic Press.

SHOPEN, T., ed.

forthcoming *Language typology and syntactic description.* Cambridge: Cambridge University Press.

SILVERSTEIN, Michael

1977 Hierarchy of features and ergativity. In R.M.W. Dixon, ed. 1977: 112-171.

SOMMERSTEIN, A.H.

1977 *Modern phonology*. London: Edward Arnold.

STAALSEN, Philip

1966 The phonemes of Iatmul. *Papers in New Guinea Linguistics* 5. *PL*, A-7:69-76.

1972 Clause relationships in Iatmul. *Papers in New Guinea Linguistics* 15. *PL*, A-31:45-69.

STAHLKE, Herbert F.W.

1974 Serial verbs as adverbs: a reply to Paul Schachter. *SAfrL*, supplement 5, 1974:271-277.

STEADMAN, Lyle B.

1971 Neighbours and killers: residence and dominance among the Hewa of New Guinea. Ph.D. thesis, The Australian National University, Canberra.

STOCKWELL, Robert P. and Ronald K.S. MACAULAY, eds

1972 *Linguistic change and generative theory*. Bloomington: Indiana University Press.

SUGITA, Hiroshi

1973 Semitransitive verbs and object incorporation in Micronesian linguistics. *OL* 12:393-405.

TANNENHAUS, Michael K. and John M. CARROLL

1975 The clausal processing hierarchy... and nouniness. *Papers from the Parasession of functionalism*, April 17, 1975:499-511. Chicago: CLS.

THOMPSON, Sandra A. and Robert E. LONGACRE

forth- coming Adverbial clauses. To appear in Anderson et al., eds. forthcoming: Chapter III:4.

TOWNSEND, Patricia K.W.

1970 *Subsistence and social organization in a New Guinea society*. Ann Arbor, Michigan: University Microfilms.

TRÁVNÍČEK, F.

1962 O tak zvaném aktuálím členění větném [on the so-called functional sentence perspective]. *SS* 22:163-171.

VAN VALIN, Robert D., Jr and William A. FOLEY

1980 Role and reference grammar. In E.A. Moravcsik, ed. *Syntax and semantics*, vol.13: *Current approaches to syntax*, 329-352.

WATERHOUSE, Viola

1974 *The history and development of tagmemics*. The Hague: Mouton.

WOODBURY, Hanni

1975 Onondaga noun incorporation: some notes on the interdependence of syntax and semantics. *IJAL* 41/1:10-20.

WURM, Stephen A., ed.

1975 *New Guinea area languages and language study*, vol.1: *Papuan languages and the New Guinea linguistic scene*. *PL*, C-38.

WURM, Stephen A.

1975 Eastern Central Trans-New Guinea Phylum languages. In Wurm, ed. 1975:461-526.

WURM, Stephen A. and Kenneth A. McELHANON

1975 Papuan language classification problems. In Wurm, ed. 1975:145-164.

ZUBIN, David A.

1976 Salience and egocentrism: a quantitative study of meaning of the nominative in German. MS.

1979 Discourse function of morphology: the focus system in German. In Talmy Givón, ed. *Syntax and semantics*, vol.12: *Discourse and syntax*, 469-504. New York: Academic Press.

Bruce, L. *The Alamblak language of Papua New Guinea (East Sepik)*.
C-81, vi + 367 pages. Pacific Linguistics, The Australian National University, 1984. DOI:*10.15144/PL-C81.1*
©1984 Pacific Linguistics and/or the author(s). Online edition licensed 2015 **CC BY-SA 4.0**, with permission of PL. A **sealang.net/CRCL** initiative.