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ABSTRACT

The present thesis is a morphological description of the entity regarded by traditional grammarians, e.g. Sibawayh and Al-Ghalaini, as a verb.

The thesis is composed of two major parts. Part I consists of four chapters which introduce the Axiomatic Functionalist theory. Chapter I explains the hypothetico-deductive approach in the theory. Chapter II deals with the position of human language, as a semiotic system, among other semiotic systems. Chapter III is an explanation of the criteria employed in distinguishing between morphological and syntactic complexes. Chapter IV deals with Allomorphy which is the realisational aspect of the abstract entities, e.g. monemes, mentioned in chapter II of Part I.

Part II is the morphological description of the Arabic verbal entity. The second part consists of two chapters where chapter I is a morphological analysis of the verbal entity. A model is set up, as a frame of reference, for the purpose of analysis. The model is a set of paradigms which are of the categories: Verb-base, Aspect, Voice, Person, Gender and Number. Each of these paradigms contains monemes which are constituents of the verbal entity in question, which commute with each other causing a difference in the message conveyed by the verbal entity concerned. The conclusion arrived at the end of the first chapter of Part I is that entities of the verb category in Arabic can contain the constituent monemes: verb-base, perfect, imperfect, active, passive, third person, second person, first person, masculine, feminine, singular, dual, plural and imperative where the latter excludes the monemes of Aspect, Voice and Person.

Chapter II deals with the realisational aspect of the constituent monemes in complex phrases given in chapter I of this Part.

In addition to the realisational aspect of the said monemes, Chapter II also gives the distribution of the allomorphs of the constituent monemes in question in relation to each other.

A Morphological Description
of the Verb in
Formal Arabic

by

Isam N. Y. Ashkuri



A thesis submitted for
an M. Litt. Degree in
the University of
St. Andrews.

January, 1979.

Declaration

I hereby declare that the present work which is a record of research performed by myself, was conducted under the supervision of Dr. D. Roberts, Department of Linguistics, University of St. Andrews to which I was admitted as a research student under the M. Litt. Resolution, and as a candidate for the degree of Master of Letters in October, 1976.

I also declare that this thesis embodies work which is being made public for the first time, and which has not been accepted previously for any degree.

Isam N. Y. Ashkuri

(ii)

Certificate

I hereby certify that the conditions of the Ordinance and Regulations concerning the admission of an M. Litt. thesis have been fulfilled by Mr. Isam N. Y. Ashkuri.

Supervisor.

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INTRODUCTION

The present thesis is an axiomatic functionalist morphological description of the entity, in formal Arabic language, that traditional grammarians, e.g. Sībawayh and Al-Ghalaiini, regard as verb.

Because the term verb, as used by traditional grammarians in formal Arabic, covers a vast field of data and since we are conducting only a morphological description of the verb, we have selected certain areas of the field in question for our morphological description, which are:

1. the verb in the past and the present
2. the verb in the active and the passive
3. the verb in the imperative.

Certain areas of the verb recognised by traditional grammarians are excluded in order that the scope of this study may be kept within reasonable limits. Thus we limit ourselves to that set of verbs identified by traditional grammarians in terms of their having three or four consonants. We exclude the phenomenon known as "emphasis" and also that category of verbs recognised in terms of ending with long vowels.

The term 'Arabic language', as used in this thesis, applies to the formal Arabic language used for public comprehension, such as the language of educated classes utilised in conferences and formal speeches.

Below is a list of the phonemes⁽¹⁾ and their reading conventions (in terms of their phonetic description⁽²⁾) as used in the representation of the Arabic examples.

<u>Phoneme</u>	<u>Major Realisations</u>	<u>Description [in phonetic terms]</u>	<u>example</u>
1. /b/	[b]	Voiced bilabial stop	bāʿa (he sold)
	[p]	voiceless bilabial stop	ḥapsun ⁽³⁾ "prison"
2. /t/	[t]	voiceless unaspirated dental stop	kataba (he wrote)
3. /d/	[d]	voiced dental stop	dafaʿa (he pushed)
4. /t̤/	[t̤]	voiceless dental velarized stop	ṭalaʿa (he went out)
5. /d̤/	[d̤]	voiced dental velarized stop	ḍaraba (he hit)
6. /k/	[k]	voiceless unaspirated velar stop	malikun (a king)
	[k ^h]	voiceless aspirated velar stop	kataba (he wrote)
7. /q/	[q]	voiceless unaspirated uvular stop	qāla (he said)
8. /ʔ/	[ʔ]	voiceless glottal stop	ʔunṣur (support!)
9. /f/	[f]	voiceless labio-dental fricative	fataḥa (he opened)
10. /θ/	[θ]	voiceless interdental fricative	kaṯura (it increased)
11. /ð/	[ð]	voiced interdental fricative	ḏahaba (he went)
12. /s/	[s]	voiceless alveolar fricative	sābaʿa (he raced)

(1) See forthcoming Ph.D. thesis by M.Y. Suleiman, Dept. of Linguistics, Univ. of St. Andrews

(2) See Nasr 1967 and Beeston 1970.

(3) Nasr 1967.

13.	/z/	[z]	voiced alveolar fricative	zāha (he pushed aside)
14.	/s/	[s]	voiceless velarized fricative	ṣanaṣa (he made)
15.	/ð/	[ð]	voiced velarized inter-dental fricative	ḥafīḥa (he memorised)
16.	/ʃ/	[ʃ]	voiceless alveopalatal fricative	ṣariba (he drank)
17.	/ʒ/	[ʒ]	voiced alveopalatal fricative	daḥraḥa (he rolled)
18.	/x/	[x]	voiceless velar fricative	xaraḥa (he went out)
19.	/ɣ/	[ɣ]	voiced velar fricative	ḡalaḡa (he or it shut)
20.	/ħ/	[ħ]	voiceless pharyngeal fricative	zāha (he pushed aside)
21.	/ʕ/	[ʕ]	voiced pharyngeal fricative	ʕalima (he knew)
22.	/h/	[h]	voiceless glottal fricative	haraba (he ran away)
23.	/m/	[m]	voiced bilabial nasal	ʕalima (he knew)
24.	/n/	[n]	voiced alveolar nasal	nāla (he achieved)
25.	/l/	[l]	voiced alveolar lateral	nāla (he achieved)
26.	/L/	[L]	voiced velarised lateral	uāLLāhi (by God)
27.	/r/	[r]	voiced alveolar flap	baʕara (he scattered)
28.	/a/	[a]	low front close unrounded	naṣara (he supported)
29.	/ā/	[ā]	low central open unrounded	qāla (he said)
30.	/i/	[i]	high front open unrounded	nuṣira (he was supported)
		[y]	semivowel, front rounded	iaḡtubu (he writes)

31.	/ī/	[ī̄]	high front close unrounded	qīla (it was said)
32.	/u/	[u]	high back open rounded	qul (say!)
		[w]	semivowel, back unrounded	uḥaba (he bestowed)
33.	/ū/	[ū̄]	high backclose unrounded	iaqūlu (he says)

Note that the phonemes /i/ and /u/ have the allophones [ī] and [ȳ], [u] and [w] respectively. The glide allophones occur preceding another vowel phoneme. The distinction between the vocalic and glide allophones is normally shown in terms of the dot marking the nuclear element, hence the vocalic allophone. Thus for the sake of simplicity, when dealing with only one vowel, we shall omit the dot, since this is unambiguous, but with a sequence of two vowel phonemes we shall mark the nucleus. Thus /iaktubu/ is to be read as [yaktubu].

PART ONE

INTRODUCTION OF AXIOMATIC FUNCTIONALISM THEORY

The methodology employed in this thesis for the description of the verb in Arabic is Mulder's axiomatic functionalism. So Part One consists of a general explanation of the features that characterise the said approach.

CHAPTER IAxiomatic functionalist theory and descriptionSection I: Hypothetico-deductivism in the Mulderian sense

From the point of view of the philosophy of science, the methodology of axiomatic functionalism is a hypothetico-deductive approach in the sense that the linguistic theory used is deductively organised and the description is hypothetical, in the sense that the statements which it contains are hypotheses about the phenomena described.

Mulder's theory, as a system, does not refer directly to the speech phenomena, but it has the potential of application to reality. The statements in the theory are not hypothetical, in that they cannot be tested by confrontation with empirical facts. Thus the theory contains no existential claim. However, there are assumptions of consistency and appropriateness made about the statements of the theory which are hypothetical in the sense that they can be refuted by confronting them with facts but can not be proved.

The theory is composed of, statements being of two types, axioms and definitions, in addition to primitive and defined terms. The task of definitions is to clarify and assign meaning to the non-primitive terms of the theory. The other task is to introduce notions of the theory. Thus, from the definitions, models can be

derived. These models are notions of a certain type in the sense that they are in an exact correspondence with the models in the description. The description's models, in their turn, correspond exactly to the speech phenomena.

Thus from axiomatic functionalism's point of view, a structural scientific description of any set of data can be accomplished by having a theory with the above properties.

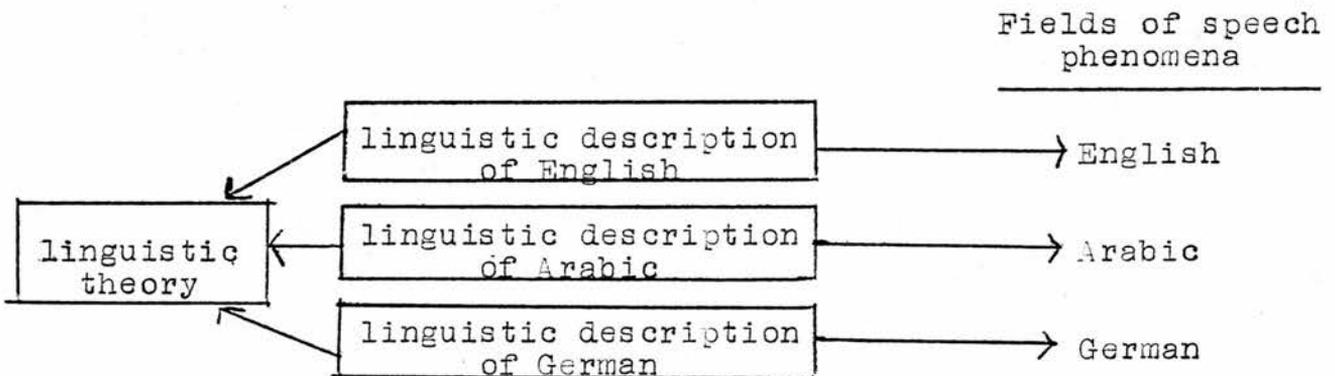
The statements in the description are scientific hypotheses. They are 'scientific' in the sense that they are consistent with the theory and 'hypothetical' in the sense that they can be confronted with empirical facts to test their validity and appropriateness. They are refuted if the data provide counter-evidence to what the hypotheses assert about them but they are upheld in the case of no counter-evidence being furnished by the data in question.

Each hypothetical statement, in the description, is implicitly accompanied by a meta-hypothesis (a hypothesis about the hypothesis). These meta-hypotheses are about the consistency, adequacy and the simplicity of the descriptive statements.

A description may, also, contain quasi-definitions (definition-like statements). Quasi-definitions are only relevant to that particular description. They are 'language-specific' and introduce generalizing labels, for purely descriptive notions, e.g. consonant, semi-vowel, verb, adjective, subject. The reason for such labels is to administer, organise and simplify the description. This will become clear in the description of the verb in Arabic in Part II where labels like "verb-base " and "aspect" are introduced as language-specific classificatory labels.

Section 2: Linguistic theory, linguistic description and speech phenomena.

Mulder places great stress on the demarcation between linguistic theory and linguistic descriptions. The latter are dependent upon and link together the linguistic theory and the speech phenomena. There is a one-to-one relation between a particular description and a field of speech phenomena, but there is a one-to-many relation between a linguistic theory and fields of speech phenomena via the descriptions of each of these fields. These relations can be represented thus:



arrows = ~~mean~~ presupposes or implies

Unlike in other sciences, a linguistic theory yields more than one description. One should be able to make a description of different fields of speech phenomena on the basis of one and the same linguistic theory. A linguistic description presupposes a linguistic theory and a field of speech phenomena. Thus, for example, a linguistic description of Arabic presupposes a linguistic theory and a field of speech phenomena which can be called Arabic.⁽¹⁾

The data for a linguistic description are those aspects of speech phenomena that are directly relevant to communication. We may justify this position by reference to the tenet that language is a communication system. Language is a semiotic

(1) Mulder, 1975.

system which is defined as "system of conventions for communication." (2)

The area of speech phenomena is arbitrarily selected and then the aspects to be described are those that are regarded as "functional" to communication. (see section 4) In collecting the data, the functional principle is always taken into account so as to avoid the inclusion in the description of those elements which are a priori irrelevant to communication. Coughs and sneezes, for example, are a priori not relevant to the description because, under the functional principle, we do not regard them as belonging to the communicative aspect of speech. Moreover, we are interested in a particular, small selected area within the field of speech phenomena, which is the morphological structure of the verb in the Arabic language.

Section 3: Consistency, adequacy and simplicity.

The description, to be consistent, must have the following properties:

- (1) All statements of the description are justified by the theory since the former is dependent on the latter. If a descriptive statement is not justified by the theory, then that statement is arbitrary. This leads to the situation where the description will be arbitrary because it contains arbitrary statements.
- (2) Every statement in the description, must be consistent with other statements. If two statements are backed up by the theory but contradict each other, then they are regarded as meaningless in terms of the description.
- (3) The description's statements must, also, be consistent with the data described.

(2) Mulder's Postulates, 1974.

To be adequate, a description ought to account for all the data (field of speech phenomena) that are selected for the description. A model is set up for the description of the data, a model that is supposed to account for the available data as well as for any relevant potential data. If the model established is not good enough to account for all possible data then the description will be considered as inadequate. That is, the description should be adequate in the sense that it can account for all the data, both potential and actual.

Mulder points out that the principle of simplicity in the description can be maintained, first, in not having any redundant elements in the description, and second, in avoiding, as much as possible, any complexities of the statements as well as reducing the number of statements to the minimum which would preserve the conditions of consistency and adequacy.

The theory is evaluated in terms of "meta-hypotheses" which are statements about the theory. The statements and models in the theory are accompanied by the meta-hypotheses, those of consistency (within the theory) adequacy and the optimum possible simplicity. The meta-hypotheses are proper hypotheses for they refer to the data observed and are, in principle, potentially refutable by counter-evidence. They are not in the theory but about the theory.

The theory, like the description, should also be consistent, adequate and relatively simple. But as there is a one-to-many relation between the theory and the description, it would be reasonable to give up some simplicity in the theory in order to have more simplicity in the descriptions which are based on that theory.

As the description, the theory is regarded to be adequate if it fulfils its purpose. Yet, we should point out that the

theory's purpose differs from that of the description. The purpose of the theory is to provide the means with which descriptions can be conducted, whereas the description is actually an interpretation of the data in terms of the theory employed. According to Mulder's point of view,⁽³⁾ one is not entirely free in setting up his theory or in selecting a statement for the theory because there are limitations which should be regarded as the framework within which the theory is set up. These limitations are, in fact, considerations of appropriateness of the theory. The selection of the first statement is controlled by considerations of appropriateness. All other statements that follow must not be inconsistent with the first one and with each other.

Section 4: Function.

Mulder sets up his linguistics within the overall framework of semiotics. His interest in selecting his field of speech phenomena, lies in that aspect which is of direct relevance to communication via those speech phenomena. To isolate such an aspect, he utilises the criterion called "function." This criterion is regarded as the dominating principle which spreads through and characterises the whole of his approach. (The other main characteristic is that of the "double articulation" which we shall come to in the chapter called 'Language as a system of systems'). All the other features and principles are subordinated to it. The functional principle is the main theoretical point of view that acts as the limiting factor in selecting the speech phenomena and delimiting the scope of the description. The type

(3) Mulder's "The Strategy of Linguistics," 1976.

of data that is relevant and possible for the description depends on the point of view and the theory. In fact the point of view is incorporated in the theory.

"Functional" is defined as "separately relevant to the purport of the whole of which it is a part"⁽⁴⁾ In ordinary language a functional entity is that which is relevant to the purport of communication and as such it will be relevant to the description.

According to the functional principle, attention is steered towards the entities of the linguistic system that are opposed to each other. Between such entities there are differences which result in giving those entities distinctive roles in communication. For example, the phonemes /p/ and /b/, in English, are entities in opposition within the same context /-it/, as illustrated below:

/p/= occlusive, labial and non-voiced as in /pit/.

/b/= occlusive, labial and voiced as in /bit/.

The difference of voiced and non-voiced is the factor that makes the two entities opposed to each other.

(4) Mulder's postulates, 1974.

CHAPTER IILanguage as a system of systems

Human language is defined by Mulder as a "semiotic system with a double articulation."⁽¹⁾ By "double articulation" he means the grammatical articulation which is the articulation into elements of form and meaning i.e. signs, and the phonological articulation which is the articulation into elements with form alone.⁽²⁾ Mulder defines articulation as "structuring by means of discrete constituents" and as "potential for functional ordering of constituents."⁽³⁾ Articulation can be explained as the syntagmatic⁽⁴⁾ structuring of the elements into complexes in the systems concerned. Functional ordering, constructional asymmetry, is the relation that exists between the elements in the complexes in question.

In English, if we take a complex such as "old men and women"⁽⁵⁾, we can interpret it as having two meanings. One interpretation is 'women and old men' and the other is 'old men and old women.' Yet, we can see that both complexes contain the same sets of ultimate constituents and also, both complexes are in the same linear sequence. This case exhibits for us the point that the two complexes differ only in their constructional

- (1) "Semiotic system" for "system of conventions for communication." Mulder's postulates, 1974, and Mulder & Hervey, 1975.
- (2) Hervey, 1972.
- (3) Mulder & Hervey, 1975.
- (4) "Syntagmatic" for "the ordering aspect of semiotic entities", Mulder's Postulates, 1974.
- (5) Mulder & Hervey, 1975.

relations that hold within them. These relations, due to their difference in nature, are functional relevant ordering relations.

Functional ordering relations are stated in terms of entities standing in nuclear and peripheral positions. The entity in nuclear position, in an ordered complex, is the governing entity of the complex. All the other entities, standing in peripheral positions, depend on the nucleus in their tactic relations. (6)

Again in English, if we permute the phonemes (see below) of /lip/, we get /pil/ where both /lip/ and /pil/ have communicative potential because they are separately relevant. The nature of the arrangement of the phonemes, in each of the two complexes of phonemes, is functional.

Other than functional ordering relations, in human language, there are simultaneous relations which also exist between elements in combinations, simultaneous relations being "symmetrical relations between entities in combinations." (7) For example in English, "books" can be analyzed into "book" + "plural". The simultaneous relation represented as "book R plural" (8) is not distinct, in any significant way, from its converse "plural \bar{R} book".

Also in English, it is irrelevant to qualify the phoneme /p/ as the bundle of features (see below) (occlusive, labial and unvoiced) or as (unvoiced, labial and occlusive) since the

(6) "Tactic relations" for "constructional relations (whether ordering or not) between syntagmatic entities, as immediate constituents, in combinations". "Syntagmatic entity" for "entity capable of standing in ordering relations with other entities or having an internal structure such that it is capable of containing - as constituents - entities capable of standing in ordering relations with other entities." Mulder's Postulates, 1974.

(7) Mulder's Postulates, 1974.

(8) R = relation or in relation to, \bar{R} = converse of relation.

relations between the features are the same in both cases, i.e. simultaneity.

Essentially the difference between ordering and simultaneous relations reduces to a matter of priority: in the former we can assign some priority to one of the constituents captured by the notion of nuclearity, while in the latter there is no priority.

Human language is composed of a phonological system and a grammatical system. We can now see how ordering and simultaneous relations apply to these systems.

In phonology, phonematics is identified as an unordered complex system because it contains complexes whose elements stand in a relation of simultaneity. The minimal entities in phonematics are the distinctive features, e.g. the features of the phoneme /p/ which axiomatic functionalism recognizes in describing English. These are not further analysable into smaller phonological entities. Distinctive features, combine into unordered complexes which are the phonemes. Thus, a phoneme is a simultaneous bundle of distinctive features.

Phonotactics is the other phonological system which contains ordered complexes of phonemes, the phonotagms, e.g. /lip/ and /pil/. Phonotagms are the distributional units that contain positions⁽⁹⁾ in which phonemes stand. That is, there are syntagmatic relations⁽¹⁰⁾ between the phonemes. This system,

(9) "positions" for "points on a chain corresponding to relations of direct tactic relations." "Direct relations" for "relation between constituents (not necessarily immediate constituents) that is not a relation via other constituents." (for tactic relations see footnote No. 5). "In semiotic systems there are direct relations between peripheral immediate constituents and the nucleus,---." "As these are relations between immediate constituents, they are at the same time tactic relations, and, consequently, they are direct tactic relations." Mulder's postulates, 1974.

(10) "Syntagmatic relations" for "ordering relations between semiotic entities in combinations." Mulder's postulates, 1974.

phonotactics, is known as the system with the phonological articulation.

Distinctive features are the atomic entities in phonematics while the phonemes are the molecular ones. In phonotactics, the phonemes are the atomic entities whereas the phonotagms are the molecular ones. Phonematics and phonotactics interlock in the sense that the former provides the basic elements (phonemes) of the latter.

In grammar, morphology is an unordered complex system whose basic elements are simple signs⁽¹¹⁾ called monemes. (For monemes see Chapter III of this Part.) These monemes form combinations, the pleremes which are simultaneous bundles of one or more monemes, e.g. books as a simultaneous bundle of "book" and "plural".

Grammar also contains an ordered complex system, syntax, whose basic elements are pleremes. They are minimum syntagmatic entities⁽¹²⁾, ultimate constituents. In syntax, we find ordered complexes, syntagms, e.g. "James hit John" , resulting from the distribution of elements at positions in syntactic structures. This system, syntax, is known as the system with the grammatical articulation. In syntax, we have morphological complexes, pleremes, and syntactic complexes, syntagms. (See Chapter III of this Part.) The two sub-systems interlock in the sense that morphology provides the basic elements, pleremes, for syntax. The monemes in grammar

(11) "Sign" for "signum with wholly fixed conventional information-value." "Sign or symbol" for "semiotic entity with both form and information-value," simply called "signum" or "plerematic entity". "Information-value" for "specific set of potential interpretation." Mulder's Postulates, 1974.

(12) See footnote No. 5.

are analogous to the distinctive features in phonology while the pleremes are on par with phonemes and the phonotagms are on par with the syntagms. Furthermore, phonology interlocks with grammar in the sense that the former provides the phonological forms of the latter's entities.

The above discussion has been concerned with discrete elements. However, we can also recognize non-discrete elements known as para-tactic features and again we can recognize such elements for the level of phonology and the level of grammar.

Human language embodies a para-phonotactic system and a para-syntactic system.⁽¹³⁾ The tactic entities (of phonotactics or syntax) are accompanied by para-tactic features. These para-tactic features are amassed together, from the functional point of view, under the term prosody.⁽¹⁴⁾ Unlike tactic entities, para-tactic features are non-discrete entities. Para-tactic features are either contrastive or distinctive features. Contrastive para-tactic features in phonology, are defined as "features with the sole function of groupment over and above cenotactic groupment",⁽¹⁵⁾ such as "junction" or "accent" while distinctive para-tactic features are "para-cenotactic features that are in a relation of commutation with one or more other para-cenotactic features, or

- (13) This is only a brief explanation of what is understood by para-tactic systems in both phonology and grammar in human language, since it does not fall within the scope of our thesis.
- (14) Mulder's Postulates, 1974.
- (15) Mulder's Postulates, 1974. "Phonotactics" for "cenotactics in natural language." Mulder's postulates, 1974.

with 'zero' such as "tone" in natural language.⁽¹⁶⁾

On the other hand, the contrastive para-tactic features in syntax are defined as "features with the sole function of groupment over and above syntactic groupment"⁽¹⁷⁾ and these features can be exemplified by what is called "suspensive" clause intonation. It is represented by a comma in writing. A difference can be found between

1. "David bought a car, John sold it again." and,
2. "David bought a car. John sold it again."

In (1) we have one sentence whereas in (2) we have two sentences.

As for the distinctive para-syntactic features, they are defined as "para-syntactic features (of a plerematic nature, i.e. involving both form and information-value) that are in a relation of commutation with one or more other para-syntactic features."⁽¹⁸⁾ A good example will be, in human language, sentence intonation. For instance, in English, we can notice differences in meanings between the following:

1. "Neil bought a house."
2. "Neil bought a house?", and
3. "Neil bought a house!"

(16) Mulder's Postulates, 1974. "Commutation" for "alternation between entities (or "zero" and semiotic entities) in functional opposition as immediate constituents, in a given context." Mulder's Postulates, 1974.

(17) Mulder's Postulates, 1974.

(18) Ibid.

CHAPTER IIIMorphological Complexes and Syntactic Complexes

All grammatical elements, as signs, are either simple or complex with view to grammatical analysis. A complex sign is analysable into smaller constituent signs, e.g. "the boy", whereas a simple sign is not, e.g. "boy". A complex sign can either be morphological or syntactic. A morphological complex is a self-contained⁽¹⁾ simultaneous bundle of two or more monemes, these being minimal linguistic signs. In other words, they are simple signs but not vice versa in that a simple sign can be a plereme. We can have the moneme "boy" which can also be regarded as the plereme "boy" in the complex "the boy". Monemes are the ultimate constituents of morphology as well as the whole of the grammatical system.

A syntactic complex is a complex constituted by at least two signs and the type of relation that holds between the constituent signs is a constructional asymmetrical relation. A "syntagm," which is a syntactic complex, is defined as "self-contained bundle of positions in grammar."⁽²⁾ (In syntax, complexes may contain other types of relation but we are only concerned here with the asymmetrical relation. For other types see Mulder's Postulates, definitions 11b and 11c.)

In this chapter we are interested in distinguishing between

(1) "Self-contained" for "representing all relative dependences of its members, as members of the set in question." Mulder's Postulates, 1974.

(2) Mulder's postulates, 1974.

morphological complexes and syntactic complexes. The primary step towards our aim is to assume as a hypothesis that the complex we are dealing with, is a simultaneous bundle of a certain set of monemes. We try to refute this hypothesis by attempting to demonstrate that the complex is syntactic. If the hypothesis is not refuted then the complex is morphological.

For the above purpose we apply the axiomatic functionalist criteria for distinguishing between morphological complexes and syntactic complexes. The criteria are:-

- "(a) The complex sign P is a potential constituent. The equivalent definition of 'simultaneous bundle of distinctive features' (in grammar: monemes) is 'minimum syntagmatic element', and all minimum syntagmatic elements are potential constituents, though not vice versa.
- (b) The set X consists of at least two signs. If this were not the case - and a condition is that each constituent must be identified as a sign with a sign in at least one other context - then the sign P could not consistently be said to be complex.
- (c) The set X contains only simple signs. Monemes are simple signs (though not vice versa), and therefore any complex containing at least one constituent sign which is itself a complex sign, cannot be a 'simultaneous bundle of monemes', by definition. This requirement, could be restated as a requirement that the immediate constituents of a 'morphological complex' should at the same time be its ultimate constituents.
- (d) The members of the set X (of simple signs) all stand in a relation of simultaneity to one another in the complex sign P. The other alternative, which is that at least two members

of the set X are not simultaneous in P, implies that the complex P is a 'syntactic complex,' and thereby directly refutes the hypothesis that P is a 'morphological complex.'"(3)

According to the first criterion, we try to find out if the entity to be analysed is a self-contained potential grammatical constituent or not. To decide on this point, we apply the commutation test.(4) If the entity commutes validly(5) with other entities in a larger complex, then we can conclude that the entity is a potential constituent. In this manner, it is possible for us to say that, for example in English, "remarry" is a self-contained potential constituent because it can be commuted with "go" and "play" in the context "he will _____ tomorrow."

In accordance with the second criterion, we have to determine whether the entity we are dealing with, is a complex sign or a simple sign. That is, we try to determine if the entity is analysable into two or more constituent signs. We again resort to commutation here. In this case, we should be cautious in avoiding a pseudo-analysis. Pseudo-analysis can be the result of intuition or analysis conducted on the basis of 'form' only. The constituents of the complex sign P must be signs in form and information-value, i.e. denotation.(6)

(3) Hervey and Mulder 1973.

(4) "Commutation" for "alternation between semiotic entities (or "zero" and semiotic entities) in functional opposition as immediate constituents, in a given context." Mulder's postulates, 1974.

(5) "A valid commutation is a commutation of elements in a complex in such a way that the complex remains well-formed and the grammatical relations between the immediate constituents are not demonstrably affected" Hervey and Mulder, 1973.

(6) "Information-value" for "specific set of potential interpretations." Mulder's postulates, 1974. In calling "information-value" denotation, we are giving a rough definition of the latter for the purpose of this thesis only. For "denotation" see Hervey's postulates "Axiomatic Semiotics" (1973).

Each constituent sign in the complex sign P must occur in at least one other complex sign with the same denotation and the same form except in the case of signs that have more than one allomorph (see Ch. IV of this part), for example, in English the plural sign has more than one allomorph. In other words, they are different phonological forms with the same denotation. The denotation of each constituent sign must contribute to the denotation of the complex sign as a whole while the denotation of the complex itself must bear some relation to the denotation of its constituents.

Supposing we analyse the English example, "cranberry", into "cran" and "berry" then we shall be performing a pseudo-analysis because the entity (or segment) "cran" is a mere 'form' which occurs only in the sign "cranberry". That is, "cran", if taken as a sign, does not occur, with the same form and denotation, in complexes other than "cranberry."

But in the example of "remarry," we can see that if it is analysed into "re" and "marry", its constituents occur in other complexes. Our point can be stated by commutation which should be conducted in the following manner: where P = complex sign, a & b=constituent signs of the complex sign P, R=bears some relation to..., \emptyset = nothing.

P

a	R	b
denotation of a	which bears some relation to	denotation of b

(8)

The above figure is a representation of the complex sign P with its constituents (a) and (b). Commutation is performed in such a way that one constituent (a) is commuted with another entity while the relation (R) and the other constituent (b) are kept constant. The reason for this is that we should demonstrate that (a) can occur in at least one other complex in which (b) does not occur and vice versa. Thus, applying commutation to "remarry," we get:

	"re" denotation of (repetition)	R which bears some relation to	"marry" denotation of (forming a family)	
constant	"re"	R	"play" denotation of (performance)	changed
changed (9)	∅	R	"marry" denotation of (forming a family)	constant

We can say that the sign "remarry" is a complex sign consisting of the constituent signs : "re" and "marry".

The third step is to find out if the immediate constituents of the complex sign "remarry" are at the same time its ultimate constituents, in other words if "re" and "marry" are simple signs.

Because we cannot validly further analyse the constituents "re" and "marry" into smaller grammatical constituent signs, therefore we can say that the said constituents are simple signs, that is the immediate constituents ("re" and "marry") are at the same time the ultimate constituents of the complex sign "remarry."

(8) Hervey & Mulder, 1973.

(9) ∅ = nothing or zero.

in a position with (b), the other constituent sign of the complex sign, then the commutation test is a valid one. So, if any of the constituent signs of (Q) stands in a position in respect to constituent sign (b) of the complex sign P, then this means that the relation between (Q) and the constituent sign (b) is syntactic. Since the relation between (Q) and (b) is equivalent to the relation between (a) and (b) and the former relation is syntactic, then the two constituent signs, (a) and (b), stand in a syntactic relation with each other. Consequently, we may decide that the complex sign is syntactic and not morphological.

(Q) can be represented thus:

$(Q) = x R^2 (y R^3 z)$. x, y and z are the constituent signs of the syntagm (Q). R^2 and R^3 are the syntactic relations holding between x, y and z. P can be represented as $= a R^1 b$. a and b are the constituent signs of P and R^1 is the relation, whose nature we are trying to investigate, holding between a and b in the complex.

The commutation is conducted thus:

$$\begin{array}{r} a R^1 b \\ Q R^1 b \\ x R^2 (y R^3 z) R^1 b \end{array}$$

Let P be a complex sign "black box" which has been demonstrated as containing simple signs "black" and "box". We want to know the type of relation existing between "black" and "box". On the other hand let (Q) be the syntactic complex "black and white" which commutes validly with "black" in "black box". As a result of commutation, we get the complex "black and white box". In the latter we have the immediate constituents:

black and white // box

CHAPTER IVAllomorphy

Both phonology and grammar contain a constructional aspect and a realisational aspect. The constructional aspect (see Ch. II) deals with the abstract entities in phonology (phonological forms) and in grammar (linguistic signs). The realisational aspect in phonology (allophony)⁽¹⁾ is concerned with the phonetic realisations of the phonological entities. As for grammar, allomorphy is concerned with the different realisations, in terms of phonological forms, of signs. For instance, the "plural" sign in English has allomorphs with different phonological forms such as:

"/iz/" as in "churches", "/s/" as in "books", "/z/" as in "dogs".

A sign is a conjunction of a particular formal aspect, expression, and a particular meaning-bearing aspect, content. Expression and content mutually imply each other. They both imply the sign and vice versa. The sign is just like a piece of paper with its two sides. One cannot separate one side from the other. If one is there, then the rest must be there and vice versa.

(1) "Allophone or phone" for "a particular phonetic form \underline{f} , member of a particular class of phonetic forms $\{f\}$, in its capacity of standing in a relation with a particular distinctive function \underline{q} " Mulder's Postulates, 1974.

Expression is a particular class of phonological forms of a sign in its capacity of having a distinctive function in grammar. (2) Each member of the class of phonological forms is related to the same particular distinctive function of the sign in question. A content is a particular distinctive function in its capacity of being the particular distinctive function of each member of a particular class of phonological forms or alternatively as the converse of expression.

p: a phonological form, $\{p\}^i$: a particular class of phonological forms,

R: in its capacity of having a, s^i : a particular distinctive function in grammar.

\bar{R} : converse of R.

Expression is represented by the following formula:

$$E = \{p\}^i R s^i$$

and content is represented thus:

$$C = s^i \bar{R} \{p\}^i$$

The sign, as a conjunction of the two, is represented as below:

$$S = \{p\}^i R s^i \& s^i \bar{R} \{p\}^i$$

Every time we speak of a sign, we may talk in terms of its expression, since expression, content and sign are equivalent. This is, strictly speaking, not correct. But we need not state the whole thing every time we speak of a certain sign because the rest is implied anyway.

A sign is a class of one or more morphs. Each morph has a phonological form which is a member of the expression of the

(2) "Distinctive function" for "the set of commutations in which a semiotic entity may partake." Alternatively, "the set of oppositions into which a particular semiotic entity enters." Mulder's postulates, 1974. Distinctive function is represented by \underline{d} in phonology and \underline{s} in grammar.

sign in question. These morphs are called 'allomorphs.'⁽³⁾
 An allomorph, as a member representing a sign, is also a conjunction of a member of the expression and a member of the content of the sign concerned. It is represented in this manner : p R s. Allomorphs, as members of a sign, are formally different but they do not commute with one another because they have the same distinctive function of the sign which they are members of. The allomorphs are combinatory or contextual variants (in respect to phonological forms) of a sign (e.g. in English "I" and "me" which are combinatory variants of the same sign, first person).⁽⁴⁾

All linguistic entities, whether they are monemes, pleremes or syntagms have realisational aspects. They, as signs, are classes of allomorphs. In other words, allomorphy is a companion to the whole of grammar and not only to a single sub-system.

There are types of allomorphs that are considered as "irregular" in the sense that they differ from the ordinary allomorphs in the manner explained in the ensuing discussion:

a) Allomorph with zero phonological form.

The constituents of "books" and "sheep" (in the plural) are "book" + "plural" and "sheep" + "plural" respectively. The plural sign in the case of "books" is represented by the allomorph with the phonological form /s/. Whereas in the

(3) "Allomorph" or "morph" for "a particular phonological form p, member of a particular class of phonological forms $\{p\}$, in its capacity of standing in a relation with a particular distinctive function s." Mulder's postulates, 1974. "(Allo)morphs" stand for 'morphs or allomorphs', i.e. 'morph' is the general term, and 'allomorph' refer to different 'morphs' in the same set of phonological forms of a sign." Mulder, 1969. "On the are of Definition, the double articulation of language, and some of the consequences. "Forum for Modern Language Studies" Vol. V, No. 2, 1969.

(4) Mulder & Harvey, 1972

case of "sheep", the "plural" sign has no overt member. "sheep" does not have anything added to it to indicate its plurality. In opposition, to the /s/ in "books", the sign "plural" in "sheep" has no overt form. The allomorph of the sign "plural" has a zero phonological form which can be represented thus: \emptyset R s "plural".

(b) Substitutive allomorphs.

The substitutive allomorph is a replacement of one element, phonologically speaking, by another to indicate a certain sign, e.g. plurality. For example, in English, the plural of "man" is "men". In this case the /a/ is replaced by /e/ to signify plurality. It is /e/ instead of /a/ in the context of a specific sign ("plural").⁽⁵⁾ That is, the phonological form of the plural manifests itself, in this case, as a differential between /a/ and /e/, i.e. $\emptyset \sim a/Rs$ "plural"

(c) Subtractive allomorphs.

The subtractive allomorph is the deletion of a certain phonological feature to indicate a particular situation. In the French context of $\emptyset \sim /b^{\text{h}}of/$ the "plural" sign, phonologically speaking, is manifested by the omission of the feature /f/, as below:

boeuf ----- boeufs

$\emptyset \sim /b^{\text{h}}of/$ ----- $\emptyset \sim /b^{\text{h}}o/$

That is, $\emptyset \sim /b^{\text{h}}of/$ + "plural" = $\emptyset \sim /b^{\text{h}}o/$.

It is a difference between two possibilities. It looks like a minus feature, but it can be expressed as $\emptyset \sim /f/Rs$ "plural".

(5) Mulder, 1969, "On the Art of Definition, The Double Articulation of Language, And Some of the Consequences." Forum for Modern Language Studies, Vol. V, No. 2.

(d) Amalgamation

In this case we have two signs whose realisations are amalgamated into one phonological form. In French there is the /o/ in the context of "au garçon". /o/ is the amalgamated realisation of the two signs "à" and "le". The sign "à" has the allomorph /a/ R s "à" and the sign "le" has the allomorph /l/ R s "le". But in the context "au garçon" the realisation of "à" which is /o/ ~ /a/ R s "à", and the realisation of "le", which is /o/ ~ /l/ R s "le" coincide in /o/ of "au garçon". (~ = as opposed to).

(e) Discontinuous form.

This is the 'concord' feature which occurs on the allomorphic level. 'Concord' is "contextual variance with regard to allomorphs of words, which variance is governed by the use of another constituent in the construction."⁽⁶⁾ The occurrence of a certain element is governed by the occurrence of another element in the same construction. For instance in the English example of "he speaks", we have the /s/ that can be regarded as a constituent of the phonological form of the allomorph of the sign "speak" in the sense that "speak", as a word,⁽⁷⁾ has allomorphs of the phonological forms /spRik/ and /spRiks/. On the other hand, the /s/ can equally validly be regarded as a constituent of the phonological form of the grammateme⁽⁸⁾ "he" in which case /hRi/-----/s/ is the phonological form of the allomorph of "he". It is a discontinuous phonological form. The other allomorph of "he" has the phonological form /hRi/. So one allomorph has a discontinuous or interrupted phonological form while the other has not.

(6) Mulder's Postulates, 1974.

(7) "Word "for" plereme, as a class of allomorphs, established in such a fashion that all its members have a continuous (i.e. uninterrupted) phonological form." Mulder's Postulates, 1974.

(8) "Grammateme "for" plereme, as a class of allomorphs, established in such a fashion that some of its members have a non-continuous (i.e. interrupted) phonological form." Mulder's Postulates, 1974.

The 'concord' feature, here, is exhibited by the fact that the occurrence of /s/, at the end of "speak", is actually predicted and conditioned by the occurrence of a sign that refers to a third person and stands in the subject position. If it were not for this condition, the /s/ would not have appeared.

Homonymy and Homomorphy

"Homonym" is defined as "total class of allomorphs of one signum, in comparison with and its members having the same phonological forms as those of the total class of allomorphs of another signum."⁽⁹⁾ In homonyms, the formal distinction between two separate and different signs is suspended. The sets of phonological forms of two signs are identical while their distinctive functions are different, e.g. "hair" and "hare", or in Arabic "ḥusiba" meaning 'to be counted' and "ḥusiba" meaning 'believed that he is so and so.'

When a member of one class of phonological forms of a sign has an identical phonological form with a member of a class of phonological forms of another sign, these two members are "homomorphs" of each other. "Homomorph" for "allomorph of one signum and having the same phonological form as an allomorph of another signum."⁽¹⁰⁾ For example in English, we have the /iz/ which is a member of the class of phonological forms of the sign "plural" and the /iz/ as a member of the class of phonological forms of the sign "to be."

(9) Mulder's postulates, 1974.

(10) Ibid.

Part II: DescriptionChapter I: The Entity of the Verb Category in Arabic as a Morphological Complex.

The purpose of this chapter is to launch and discuss, from the point of view of Mulder's axiomatic functionalism, the hypothesis that all entities belonging to the "verb" category, in the Arabic language, are morphological complex signs⁽¹⁾, i.e. complex pleremes⁽²⁾. The said entities may contain either three, four, five or six constituent monemes. That is to say, each entity may contain:

1. a verb-base moneme,
2. a perfect moneme or an imperfect moneme,
3. an active moneme or a passive moneme,
4. a third person moneme, a second person moneme or a first person moneme,
5. a masculine moneme, a feminine moneme, or neither, i.e. zero,
6. a singular moneme, a dual moneme or a plural moneme,

or

1. a verb-base moneme,
2. an imperative moneme,
3. a masculine moneme, a feminine moneme or neither, i.e. zero
4. a singular moneme, a dual moneme or a plural moneme.

At this stage, we are giving no explanations with regard to the above. The explanations will emerge as the discussion unfolds.

Discussion

The term "verb", as used in this thesis, is a mere classificatory label whose use is motivated by the fact that

(1) We have analysed a number of entities (given in Chapter II of realisation in this Part) of the verb category in Arabic and we have not found counter-evidence to the conclusion above.

(2) "Morphological complex" for "complex pleremes." "A complex plereme (i.e. complex word or grammateme) is a morphological complex opposed to a syntactic complex." Mulder's Postulates, 1974.

it comes, more or less, close to traditional grammarians' (3) usage of the term and corresponds to this usage in the data it covers. The term "verb", as used by traditional grammarians, applies to that type of word (4) that expresses an action and has an implicit signification associated with time. On the basis of time-reference, traditional grammarians classify those entities which they regard as verbs into past, present and imperative (5), while they regard the so-called "participle" as an adjective derived from the verb.

Traditional grammarians take the verb to be in the :

1. past when its signification is associated with past time, e.g. naṣara (he supported).
2. present when its signification is associated with present time, e.g. iaṣuru (he supports).
3. imperative when its signification is that of a command given by the speaker to the addressee, e.g. ʔuṣur (support!). (See footnote 5).

Verbs are also classified, by traditional grammarians, into two classes in terms of the number of consonants their forms contain. One class is of those verbs whose forms contain three consonants, e.g. naṣara (he supported). The other class includes verbs whose forms contain four consonants, e.g. daḥraṣa (he rolled).

A third classification of verbs, by traditional grammarians, is into classes one of which includes verbs that do not contain long vowels, e.g. naṣara (he supported) and the other consisting of verbs that contain long vowels as the /ā/ in : qāla (he said). (6)

(3) By traditional grammarians we mean those who established this approach in the past (e.g. Sibawayh) and those who adopted it in the present time (e.g. Al-Ghalaini).

(4) From the point of view of traditional grammarians.

(5) We cannot see in what way the imperative is associated with time; this is especially clear if we look at the explanation of the imperative cited under (3) *above*.

(6) Al-Ghalaini Vols. I & II, 1966 and Sibawayh Vols. I & II (1316 A.H.)

Now that we have seen how traditional grammarians use the term "verb" and have a rough idea of the data covered by this category, we are in a position to launch the hypothesis that all members of the traditional "verb" category, in the Arabic language, are morphological complexes, i.e. complex pleremes. The hypothesis is open to testing by the application of the morphological analysis criteria of axiomatic functionalism.⁽⁷⁾ Here we can only give illustrative applications of the test. Our position is that there are no counter examples⁽⁸⁾ to refute the above hypothesis, which is, in that sense "corroborated".

For the purpose of our analysis, let us take the example "/naṣara/" (he supported). We, first, assume as a hypothesis that "/naṣara/" is a simultaneous bundle of monemes. This implies that "/naṣara/"

- a. is a potential self-contained grammatical constituent ,
- b. consists of more than one constituent sign,
- c. has its immediate constituent signs as the ultimate constituents at the same time. That is, the constituent signs of the complex sign are monemes, simple signs.
- d. has all its members (monemes) standing in a relation of simultaneity to one another.

Hence, our task is to test the above hypothesis by taking its implications as hypotheses to be tested. We have to find out if "/naṣara/" fulfills these conditions or not.

(7) See Hervey & Mulder 1973. Also see Chapter III of Part I which is an explanation of the said criteria.

(8) See examples given in Chapter II of realisation in this Part.

Our first step is to find out if "/naṣara/" is a potential self-contained grammatical constituent within a larger complex. We do that by commuting "/naṣara/" with other entities in the same context, e.g. _____ lṭālibu ʔaxāhu (the student _____ his brother).

- a. naṣara lṭālibu ʔaxāhu (the student supported his brother)
sāfada lṭālibu ʔaxāhu (the student helped his brother)
- b. naṣara lṭālibu ʔaxāhu (the student supported his brother)
naṣara lʔabu ʔaxāhu (the father supported his brother)
- c. naṣara lṭālibu ʔaxāhu (the student supported his brother)
naṣara lṭālibu sadīqahu (the student supported his friend)

Thus, "/naṣara/" is a potential self-contained grammatical constituent since it validly commutes with other entities in the same context.

Next we come to the stage where we have to establish the constituent signs of "/naṣara/". This we do again by commutation. We assume that "/naṣara/" can be analysed into the constituent signs which are of the categories⁽⁹⁾ Verb-base, Aspect, Voice, Person, Gender and Number⁽¹⁰⁾. The constituents, as signs, should be commutable with other entities in the same context. In commuting the constituent signs, we obtain paradigms

(9) The categories' labels are written with initial capital letters while the labels of signs are written with small letters. The categories' labels and the labels of signs belong to this description of the Arabic verb. Even though the terms may be used in descriptions of other languages, there is no necessary connection implied whatsoever with the other descriptions.

(10) We are not including (emphasis) because it is very rarely used by native speakers in the present time.

of commutant signs where each paradigm is of one of the above categories. The said paradigms can be labeled, in respect to their commutant signs, as paradigms of Verb-base, Aspect, Voice, Person, Gender⁽¹¹⁾ and Number. In the paradigms, we shall see that a particular sign in a particular paradigm commutes with another sign in the same paradigm thus producing, as a result of commutation, a functional difference, that is, a different message is conveyed when commuting one sign with another in the same paradigm. We find, in each separate commutation in respect to each paradigm, a constant correlation of difference of form with a difference of denotation. (For indicatory purposes, we shall put the paradigm being discussed in a box).

In what follows, we shall discuss the commutant signs of each paradigm.

1) Verb-base = The Verb-base paradigm (see box below) contains the signs labeled as verb-base. We recognise the verb-bases as signs because they can be opposed to each other in the same context. We give below the commutations with regard to the said verb-bases wherein we shall commute only the verb-bases in question while keeping the rest of the constituents constant.

Usually in commutations, all constituent signs of a particular entity must be commuted; but because we have allocated a separate section for the discussion of the signs of each paradigm, we shall commute only the signs of the paradigm being discussed in the section concerned. By the end of these separate discussions, we shall have all the constituent signs of "/nasara/" commuted as they should be.

(11) Later on in the discussion of the Gender paradigm, we shall see that the masculine and feminine signs do not combine with the signs, second person and dual, first person and singular or first person and plural. That is, the Gender paradigm will include zero in addition to the masculine and feminine signs.

Each of the verb-bases, as a sign, is a class of allomorphs, but it happens to be the case that each verb-base is a class of only one allomorph with a certain phonological form, as given above.

2) Aspect = The Aspect paradigm (see box below) contains the constituent signs which are labeled as perfect and imperfect. We recognise the perfect and the imperfect as signs because they, like the verb-bases, can be opposed to each other in the same context. We give below the commutations with regard to the perfect and the imperfect signs. We shall commute only the said signs while keeping the rest of the constituent signs constant.

vb = verb-base, 3rd = third person, m = masculine, s = singular

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
(a) vb /-n-ṣ-r-/	perfect /-a-a-/	active /-a-a-/	3rd /-a/	m /∅/	s /∅/	= naṣara (he supported)
(b) vb /-n-ṣ-r-/	imperfect /-a--u-/	active /-a--u-/	3rd /i-/	m /∅/	s /-u/	= iṣsuru (he supports)

Because of commutation, there is a functional difference between (a) and (b). (a) conveys a message which is different from that of (b) and vice versa. We find in the commutation above a constant correlation of difference of form with a difference of denotation. Thus, we regard the perfect and the imperfect as signs.

The perfect sign denotes that the action, expressed by "/naṣara/" (he supported), is complete. That is, "/naṣara/" expresses completeness of the action of support due to the occurrence of the perfect sign which has, in this case, an allomorph of the phonological form /-a-a-/. But the imperfect

sign denotes that the action, expressed by "/iānsuru/" expresses the incompleteness of the action of support owing to the occurrence of the imperfect sign which has, in this case, the allomorph of the phonological form /-a--u-/.

3) Voice = The Voice paradigm (see box below) contains the constituent signs which are labeled as active and passive. We regard the active and the passive as signs because they can be opposed to each other in the same context, like the signs of the Verb-base and the Aspect paradigms. Below is given the commutation of the active and the passive signs. In the commutation, only the two constituent signs will be commuted while keeping the rest of the constituent signs constant.

vb = verb-base, 3rd = third person, m = masculine, s = singular.

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
(a) vb	perfect	active	3rd	m	s = naṣara
/-n-s-r/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/ ⁽¹⁴⁾ (he supported)
(b) vb	perfect	passive	3rd	m	s = nuṣira
/-n-s-r-/	/-u-i-/	/-u-i-/	/-a/	/∅/	/∅/ (he was supported)

As a result of commutation, we find that there is a functional difference between (a) and (b). The message conveyed by (a) is different from that of (b) and vice versa. Thus the active and the passive are signs.

The active sign denotes that the entity referred to by the Person marker (see section 4 of Person in this chapter) is an agent. This is signified in the construction of "/naṣara/" by.

(14) /∅/ = zero phonological form. The masculine and singular signs, which we shall discuss in sections 5 & 6 respectively, have allomorphs with zero phonological forms in "/naṣara/".

the occurrence of the active sign whose allomorph has the phonological form /-a-a-/. The passive sign denotes that the entity referred to by the Person marker is a patient. This is signified by the occurrence of the passive sign whose allomorph has the phonological form /-u-i-/, in the case of "/nuşira/" (he was supported).

Our task now is to show that an alternative hypothesis, namely that there is one sign "perfect active"; one sign "perfect passive"; one sign "imperfect active" and one sign "imperfect passive", is refutable. We refute the hypothesis by carrying out the commutations below which demonstrate that "perfect", "imperfect", "active" and "passive" are separate and distinct signs.

vb = verb base, 3rd = third person, m = masculine, s = singular.

(A) We shall commute the active and the passive in the context of the perfect, as below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
(a)	vb	perfect	active	3rd	m	s = naşara	
	/-n-ş-r-/ ·	/-a-a-/ ·	/-a-a-/ ·	/-a/ ·	/∅/ ·	/∅/ ·	(he supported)
(b)	vb	perfect	passive	3rd	m	s = nuşira	
	/-n-ş-r-/ ·	/-u-i-/ ·	/-u-i-/ ·	/-a/ ·	/∅/ ·	/∅/ ·	(he was supported)

The message conveyed by (a) is different from that of (b) and vice versa because there is a functional difference between (a) and (b).

(B) We next commute the active and the passive in the context of the imperfect:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
(a)	vb	imperfect	active	3rd	m	s	= ianşuru
	/-n-ş-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-u/	(he supports)
(b)	vb	imperfect	passive	3rd	m	s	= iunşaru
	/-n-ş-r-/	/-u--a-/	/-u--a-/	/i-/	/∅/	/-u/	(he is supported)

Again there is a functional difference between (a) and (b). The message conveyed by (a) is different from that of (b) and vice versa.

(C) The perfect and the imperfect are commuted below in the context of the active:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
(a)	vb	perfect	active	3rd	m	s	= naşara
	/-n-ş-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)
(b)	vb	imperfect	active	3rd	m	s	= ianşuru
	/-n-ş-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-u/	(he supports)

(a) and (b) are functionally different. "/naşara/" (he supported), which is the message conveyed by (a), is different from "/ianşuru/" (he supports) which is the message conveyed by (b) and vice versa.

(D) In the commutation below, the perfect and the imperfect are commuted in the context of passive.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
(a)	vb	perfect	passive	3rd	m	s	= nuşira
	/-n-ş-r-/	/-u-i-/	/-u-i-/	/-a/	/∅/	/∅/	(he was supported)
(b)	vb	imperfect	passive	3rd	m	s	= iunşaru
	/-n-ş-r-/	/-u--a-/	/-u--a-/	/i-/	/∅/	/-u/	(he is supported)

Here again we find a functional difference between (a) and (b). (a) conveys the message "/nuṣira/" (he was supported) which is different from that conveyed by (b) which is "/iṅṣaru/" (he is supported) and vice versa.

In the commutations above, we see that in the perfect active and in the perfect passive, the third person sign has the allomorph of the phonological form /-a/ as in "/naṣara/" (he supported) and "/nuṣira/" (he was supported) respectively. In the imperfect active and the imperfect passive, the third person sign has an allomorph of the phonological form /i-/ as in "/iṅṣuru/" (he supports) and "/iṅṣaru/" (he is supported) respectively.

Let us consider, then, how the statements of realisation would be in terms of the second hypothesis.

According to the second hypothesis, we have the signs; "perfect active", "perfect passive", "imperfect active" and "imperfect passive". If the "perfect active" sign or the "perfect passive" sign occurs in the construction of the entity of the "verb" category, as in "/naṣara/" (he supported) and "/nuṣira/" (he was supported) respectively, the third person sign has the allomorph of the phonological form /-a/, whereas if the "imperfect active" sign or the "imperfect passive" sign occurs in the construction of the entity of the "verb" category, as in "/iṅṣuru/" (he supports) and "/iṅṣaru/" (he is supported) respectively, the third person sign has the allomorph of the phonological form /i-/. Thus, here we have two signs: "perfect active" and "perfect passive", correlating with /-a/ and we also have two signs: "imperfect active" and "imperfect passive", correlating with /i-/.

As for the first hypothesis, it states that there are the signs: perfect, imperfect, active and passive. When the perfect

sign occurs in the construction of the entity of the "verb" category, as in either "/naṣara/" (he supported) or "/nuṣira/" (he was supported), the third person sign has the allomorph of the phonological form /-a/ but if the imperfect sign occurs in the construction of the entity in question, as in either "/iaṣuru/" (he supports) or "/iṣaru/" (he is supported), the allomorph of the third person sign will be of the phonological form /i-/. Hence, in this case, we have one sign: perfect, correlated with the /-a/ and one sign: imperfect, correlated with the /i-/.

The above supports the first hypothesis of the perfect, imperfect, active and passive as separate and distinct signs on the grounds that the first hypothesis is simpler because in terms of the statements of realisation, we need to refer to only one sign "perfect" conditioning the occurrence of the allomorph of the third person sign whose phonological form is /-a/ in "/naṣara/" (he supported) and one sign "imperfect" conditioning the occurrence of the allomorph of the third person sign which has the phonological form /i-/ in "/iṣaru/" (he supports). On the other hand in the case of the second hypothesis, the occurrence of the allomorph of the third person sign of the phonological form /-a/ is conditioned by two signs "perfect active" and "perfect passive" and the occurrence of the other allomorph of the third person sign is also conditioned by two signs which are "imperfect active" and "imperfect passive".

4) Person = We find, in the Person paradigm (see box below), that we have three signs which are labeled as third person, second person and first person. These three signs are regarded as such because they can be opposed to each other in the same context. Commutations are given below wherein the third person, second person and first person signs are commuted while keeping the rest of the constituents constant.

vb = verb-base, 3rd = third person, 2nd = second person, 1st = first person, m = masculine, s = singular.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
(a)	vb	perfect	active	3rd	m	s = naṣara
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/ (he supported)
(b)	vb	perfect	active	2nd	m	s = naṣarta
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-t-/	/-a/	/∅/ ⁽¹⁶⁾ (you supported)
(c)	vb	perfect	active	1st		s = naṣartu
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tu/	∅ ⁽¹⁷⁾	/∅/ (I supported)

As a result of commutation, we find that there are functional differences between (a), (b) and (c). The message conveyed by (a) is different from that of either (b) or (c) and vice versa. Therefore, third person, second person and first person are signs.

The sign of the Person paradigm, whose allomorph has the phonological form /-a/ above denotes third person; the other sign of the Person paradigm, which is represented by the phonological form /-t-/ above denotes second person and the third sign which has the allomorph of the phonological form

(16) The allomorph of the singular sign has a zero phonological form in the context of second person masculine and the first person. See Chapter II of realisation in this Part.

(17) The masculine sign does not occur in the context of the first person singular. See section 5 of Gender.

/-tu/ above denotes first person.

5) Gender = In the Gender paradigm we have the signs which are labeled masculine and feminine that occur in some entities of the "verb" category and do not occur in some other entities; that is, the paradigm of Gender is filled by zero (\emptyset) when neither the masculine sign nor the feminine sign occurs in the construction of the entity in question.

Now the masculine and feminine are recognised as signs because:

1. they are part of the constructions of entities such as "/naṣara/" (he supported) and "/naṣarat/" (she supported), and
2. they can be opposed to each other in the same context.

1. If we take the following examples:

- a. naṣara lʔabu (the father supported)
- b. naṣarat lʔummu (the mother supported)

It may seem that "/naṣara/" in (a) is in the masculine because it is referring to the masculine entity "lʔabu" (the father) and that "/naṣarat/" (she supported) in (b) is in the feminine because it is referring to the feminine entity "lʔummu" (the mother).

Nevertheless, "/naṣara/" and "/naṣarat/" can occur without the occurrence of the masculine entity or the feminine entity as below:

- a. naṣara (he supported)
- b. naṣarat (she supported)

These examples demonstrate that entities of the "verb" category can either be in the masculine or feminine regardless of the occurrence or non-occurrence of entities such as "lʔabu" and "lʔummu". In other words, the sign of the Gender category does not owe its presence to the presence of the respective masculine or feminine entity.

2. In the commutation below (see box), we find that the masculine and the feminine signs are opposed to each other in the same context:

vb = verb-base, 3rd = third person, m = masculine, f = feminine, s = singular.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
(a)	vb /-n-s-r-/ ·	perfect /-a-a-/ ·	active /-a-a-/ ·	3rd /-a/ ·	m /∅/ ·	s = naṣara /∅/ (18) (he supported)
(b)	vb /-n-s-r-/ ·	perfect /-a-a-/ ·	active /-a-a-/ ·	3rd /-a-/ ·	f /-t/ ·	s = naṣarat /∅/ (she supported)

The sign of the Gender paradigm, which has an allomorph with a zero phonological form in "/naṣara/" in (a), denotes masculinity. The masculine sign has other allomorphs that do not have zero phonological forms such as the allomorph of the phonological form /-a/ in "/naṣarta/" (you supported, masculine singular) and we give a full statement of the allomorphs of the masculine sign in the second chapter on realisation in this Part.

As for the other sign of the Gender paradigm, it has an allomorph with the phonological form /-t/ and the denotation of femininity as in "/naṣarat/" in (b).

In the constructions of entities of the "verb" category like "/naṣartumā/" (you two supported), "/naṣartu/" (I supported) and "/naṣarnā/" (we supported), we find the following constituents:

vb = verb-base, 2nd = second person, 1st = first person, s = singular, d = dual, p = plural.

(18) /∅/ = zero phonological form.

a. in "/naṣartumā/" we have the signs:

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	2nd		d ⁽¹⁹⁾	=naṣartumā
/-n-s-r-/	/-a-a-/	/-a-a-/	/-tum-/	∅ ⁽²⁰⁾	/-ā/	(they two supported)

b. in "/naṣartu/" the signs are:

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	1st		s	= naṣartu
/-n-s-r-/	/-a-a-/	/-a-a-/	/-tu/	∅	/∅/	(I supported)

c. in "/naṣarnā/" we have the signs:

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	1st		p	= naṣarnā
/-n-s-r-/	/-a-a-/	/-a-a-/	/-nā/	∅	/-nā/	⁽²¹⁾ (we supported)

"/naṣartumā/" in (a) applies to both masculine and feminine because there is no opposition between masculine and feminine due to their non-occurrence in the context of second person dual. Also both of "/naṣartu/" in (b) and "/naṣarnā/" in (c) apply to masculine and feminine because again the masculine and the feminine do not oppose each other due to their non-occurrence in the context of either the first person singular or the first person plural, unlike in the commutation above where we have opposition between the masculine and the feminine owing to their occurrence in the context of third person singular, as in "/naṣara/" (he supported) and "/naṣarat/" (she supported).

Thus, we have the Gender paradigm in (a), (b) and (c) (above) filled by zero (∅) because neither the masculine nor

(19) See section b of number in this chapter.

(20) ∅ = no masculine or feminine sign occurs in the construction of "/naṣartumā/".

(21) /-nā/ is an amalgamated phonological form of the allomorphs of the first person and plural signs. See Chapter II of realisation in this Part.

the feminine signs occur so as to combine with either the second person and dual, first person and singular or with first person and plural in "/naṣartumā/", "/naṣartu/" and "/naṣarnā/" respectively.

6. Number = The Number paradigm (box below) contains the signs labeled as singular, dual and plural. These entities are recognised as signs because they can be opposed to each other in the same context as in the commutations below. We shall commute only the entities of the Number paradigm while keeping the rest of the constituents constant.

vb = verb-base, 3rd = third person, m = masculine, f = feminine, s = singular, d = dual, p = plural.

A) <u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
(a) vb	perfect	active	3rd	m	s = naṣara /∅/ ⁽²²⁾ (he supported)
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	
(b) vb	perfect	active	3rd	m	d = naṣarā /-ā/ (they two supported)
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	
(c) vb	perfect	active	3rd	m	p = naṣarū /∅/ (they supported)
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/∅/	/-ū/	
B) <u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1. vb	perfect	active	3rd	f	s = naṣarat /∅/ (she supported)
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t/	
2. vb	perfect	active	3rd	f	d = naṣaratā /-ā/ (they two supported)
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t-/	
3. vb	perfect	active	3rd	f	p = naṣarna /∅/ (they supported)
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	

(22) /∅/ = zero phonological form. For realisation of the signs of Person, Gender and Number, see Chapter II of realisation in this Part.

recognised as a sign because it can be opposed to the sum of three signs in the same context as in the commutation below (see box):

vb = verb-base, 3rd = third person, m = masculine, s = singular

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
(a) vb	perfect	active	3rd	m	s = nasara
/-n-s-r-/ ·	/-a-a-/ ·	/-a-a-/ ·	/-a/ ·	/∅/ ·	/∅/ ⁽²³⁾ (he supported)
(b) vb	i m p e r a t i v e			m	s = ?unsur
/-n-s-r-/ ·	/?u--u-/ ·			/∅/ ·	/∅/ (support!)

In the commutation above, we have opposed the imperative sign to the total of the signs: perfect, active and third person and the result is the message conveyed by (b) which is different from that of (a) because there is a functional difference between (a) and (b). The imperative is exclusive of the three signs in question. There is no completeness of action (perfect) or incompleteness of action (imperfect) when the imperative sign occurs in the constructions of entities of the "verb" category. The active or the passive do not occur in the construction of the entities concerned when the latter are in the imperative. That is, in the context of the imperative there is no opposition between the active and the passive signs. Moreover, the entities referred to above, when in the imperative, always refer to second person and neither to third person nor first person such as "/?unsur/" (support!) which is referring to second person. In other words, once the imperative sign occurs in

(23) /∅/ = zero phonological form. Also see realisations of the signs of Gender and Number, in the context of the imperative, in Chapter II of realisation in this Part.

the construction of the entity of the "verb" category, we immediately get the message that the entity in question is referring to second person. We cannot commute second person with third person or first person in the context of the imperative. Thus we can conclude that the imperative sign is exclusive of the signs: perfect and imperfect of the Aspect paradigm; the active and the passive signs of the Voice paradigm and the third person, second person and first person signs of the Person paradigm. On the other hand, the imperative sign is not exclusive of the signs of the Verb-base paradigm, the signs of the Gender paradigm and the signs of the Number paradigm as seen in the commutation above.

The imperative sign, which in this case has the allomorph of the phonological form /?u--u/, denotes that the action expressed by "/?un₁sur/" (support!) is a command.

The verb-base sign in the commutations above is the same verb-base sign that we discussed in section (1) on page 33, which has an allomorph of the phonological form /-n-s-r-/ and the denotation of something to do with supporting.

We also find in the commutations that the masculine and the singular signs have allomorphs with zero phonological forms in "/?un₁sur/". The masculine and the singular signs are again the same signs we discussed in sections (5) and (6) on pp. Also, in the imperative, as in the perfect and the imperfect, the masculine and feminine signs do not combine with the dual. (24) (See Chapter II of realisation in this Part for the realisations of the signs of Gender and Number when they occur in the constructions of entities of the "verb" category when in the imperative).

(24) See Section 5 of Gender.

To conclude our discussion of the constituent signs of "/naṣara/" (he supported), we can say that the said signs have been shown to be separately relevant and their denotations maintained in the separate commutations given in the discussion of each paradigm of signs.

Now we come to the third step of the morphological analysis wherein we have to determine whether the immediate constituent signs are at the same time the ultimate constituents. That is, we have to determine whether the constituent signs of "/naṣara/" are monemes, i.e. simple signs, or not.

The constituent signs of "/naṣara/", which are verb-base, perfect, active, third person, masculine and singular cannot be further validly analysed into smaller constituent signs. In other words, the constituent signs of "/naṣara/" cannot be broken down further into smaller entities. This comes down to saying that the constituent signs in question are monemes, i.e. simple signs. That is, the immediate constituent signs are at the same time the ultimate constituent signs of the complex signs "/naṣara/".

At this stage which is the fourth step in the present analysis, we must find out the type of relation existing between the constituent monemes of "/naṣara/". We try to determine whether the type of relation holding between all the constituent monemes is that of simultaneity and in this case "/naṣara/" would be a morphological complex sign or whether there is any instance of syntactic relation holding between any of the constituent monemes and in this case "/naṣara/" would be a syntactic complex sign. The way to determine that is, first, to assume as a hypothesis that the relation between the

constituent monemes is morphological and we attempt to refute this hypothesis by trying to demonstrate that the relation is syntactic. The means to this end is the application of two tests which are:

- a. the permutation test (reversibility of constituents)
- b. the commutation test wherein we commute one of the constituent monemes of the complex with a syntagm.

Thus according to the above, we apply the permutation test first and if we get a different message as a result of permutation then the complex sign "/našara/" is syntactic. If not, we go on to the commutation test which should give us a positive result as to whether the complex is morphological or syntactic.

The permutation test

vb = verb-base, 3rd = third person, m = masculine, s = singular

- A) permuting the moneme verb-base with the moneme perfect.

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	3rd	m	s	= našara
/-n-š-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)

<u>Aspect</u>	<u>Verb-base</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
perfect	vb	active	3rd	m	s	= našara
/-a-a-/	/-n-š-r-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)

- B) permuting the moneme verb-base with the moneme active.

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	3rd	m	s	= našara
/-n-š-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)

<u>Voice</u>	<u>Aspect</u>	<u>Verb-base</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
active	perfect	vb	3rd	m	s	= našara
/-a-a-/	/-a-a-/	/-n-š-r-/	/-a/	/∅/	/∅/	(he supported)

C) permuting the moneme verb-base with the moneme third person

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	3rd	m	s = naṣara	
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)

<u>Person</u>	<u>Aspect</u>	<u>Voice</u>	<u>Verb-base</u>	<u>Gender</u>	<u>Number</u>	
3rd	perfect	active	vb	m	s = naṣara	
/-a/	/-a-a-/	/-a-a-/	/-n-ṣ-r-/	/∅/	/∅/	(he supported)

D) permuting the moneme verb-base with the moneme masculine

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	3rd	m	s = naṣara	
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)

<u>Gender</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Verb-base</u>	<u>Number</u>	
m	perfect	active	3rd	vb	s = naṣara	
/∅/	/-a-a-/	/-a-a-/	/-a/	/-n-ṣ-r-/	/∅/	(he supported)

E) permuting the verb-base moneme with the singular moneme

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	3rd	m	s = naṣara	
/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)

<u>Number</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Verb-base</u>	
s	perfect	active	3rd	m	vb = naṣara	
/∅/	/-a-a-/	/-a-a-/	/-a/	/∅/	/-n-ṣ-r-/	(he supported)

As seen in the permutations above, we permuted the verb-base moneme with one other moneme at a time and we find that in the permutations (A), (B), (C), (D) and (E) there are no different messages conveyed. There is no functional difference.

There is, of course, a great number of possible permutations

and it would be very tedious to present them all. The permutations in question were all worked out and we did not find any difference in the messages conveyed. Consequently, we have to go to the commutation test which should give us a positive result in whether "/naṣara/" is a morphological complex or a syntactic one.

In the commutation test, we try to commute one of the constituent monemes of the complex sign "/naṣara/" with a syntagm while keeping the rest of the constituent monemes and the relation between them constant. In order to have a well-formed complex, as a result of commutation, the commutation between the constituent monemes and the syntagm must be a valid commutation. (25)

We shall commute the verb-base moneme "/-n-ṣ-r-/" with the syntagm "/naṣara ua s̄aḡada/" (he supported and helped) because we expect that there could be a potential for a valid commutation. vb = verb-base, 3rd = third person, m = masculine, s = singular.

<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
vb	perfect	active	3rd	m	s	= naṣara
/-n-ṣ-r-/ (syntagm)	/-a-a-/ perfect	/-a-a-/ active	/-a/ 3rd	/∅/ m	/∅/ s	(he supported)
/naṣara ua s̄aḡada/	/-a-a-/ perfect	/-a-a-/ active	/-a/ 3rd	/∅/ m	/∅/ s	

It is not a valid commutation since the resulting complex is not a well-formed complex, contrary to our expectation. The complex in question cannot be regarded as a potential self-contained grammatical constituent which is not in agreement with the first criterion of the morphological analysis. In simple terms, there is no such kind of complex in the Arabic language.

(25) "A valid commutation is a commutation of elements in a complex in such a way that the complex remains well-formed and the grammatical relations between the immediate constituents are not demonstrably affected." Hervey & Mulder, 1973.

As for the rest of the constituent monemes, we can say that we could not find a syntagm that will validly commute with any of them. Thus, we may say that our hypothesis, of the complex sign "/naṣara/" (he supported) being a morphological complex, is corroborated.

Accordingly, we can conclude that the entities of the "verb" category, in the Arabic language, are morphological complex signs, i.e. complex pleremes. Such entities can contain the constituent monemes which are given in the following tables: (The imperative moneme excludes all of the monemes of Aspect, Voice and Person)

Verb-base	Aspect	Voice	Person	Gender	Number
verb-base monemes	perfect	active	third person	masculine moneme	singul- lar moneme
	imperfect	moneme	moneme	feminine	dual moneme
		passive	person moneme	moneme	plural moneme
	moneme	moneme	first person moneme	No Gender moneme	
	i m p e r a t i v e moneme				

CHAPTER IIThe Realizational Aspect of the
Constituent Monemes of the Verbal Complex Plereme

In this chapter we shall give some of the realisations of the constituent monemes of verbal complex pleremes.

The monemes are:

1. verb-base,
2. perfect and imperfect,
3. active and passive,
4. imperative,
5. third person, second person, first person,
6. masculine and feminine,
7. singular, dual and plural.

Before going into the discussion of the realisations in question, we shall first give tables of the phonological forms of the allomorphs of the constituent monemes as they occur in verbal complex pleremes with the verb-base "/-n-s-r-/".

We have divided the class into four groups. Group I is of the complex pleremes containing the perfect and the active monemes; group II contains the complex pleremes that have the perfect and the passive monemes; group III is of the complex pleremes that contain the monemes imperfect and active and group IV is of the complex pleremes having the monemes imperfect and passive. Each of these four groups is further divided into sub-groups in terms of the occurrence of the monemes of Person, Gender and Number in the constructions of the respective complex pleremes.

vb = verb-base, 3rd = third person, 2nd = second person,
1st = first person, m = masculine, f = feminine, s = singular,
d = dual, p = plural.

Group I

A)	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	perfect	active	3rd	m	s = naṣara /n-ṣ-r-/ /-a-a-/ /-a-a-/ /-a/ /∅/ /∅/ ⁽¹⁾ (he supported)
2.	vb	perfect	active	3rd	m	d = naṣarā /n-ṣ-r-/ /-a-a-/ /-a-a-/ /∅/ /∅/ /-ā/ (they two supported)
3.	vb	perfect	active	3rd	m	p = naṣarū /n-ṣ-r-/ /-a-a-/ /-a-a-/ /∅/ /-ū/ /∅/ (they supported)

B)1.	vb	perfect	active	3rd	f	s = naṣarat /n-ṣ-r-/ /-a-a-/ /-a-a-/ /-a/ /-t/ /∅/ (she supported)
2.	vb	perfect	active	3rd	f	d = naṣaratā /n-ṣ-r-/ /-a-a-/ /-a-a-/ /-a- /-t-/ /-ā/ (they two supported)
3.	vb	perfect	active	3rd	f	p = naṣarna /n-ṣ-r-/ /-a-a-/ /-a-a-/ /∅/ /∅/ /-na/ (they supported)

C)1.	vb	perfect	active	2nd	m	s = naṣarta /n-ṣ-r-/ /-a-a-/ /-a-a-/ /-t-/ /-a/ /∅/ (you supported)
2.	vb	perfect	active	2nd		d = naṣartumā /n-ṣ-r-/ /-a-a-/ /-a-a-/ /-tum/ ∅ (2) /-ā/ (you two supported)
3.	vb	perfect	active	2nd	m	p = naṣartum /n-ṣ-r-/ /-a-a-/ /-a-a-/ /-tum/ /∅/ /∅/ (you supported)

(1) /∅/ = zero phonological form.

(2) ∅ = neither the masculine nor the feminine occurs with second person dual and thus we need to give the dual only once. See section of Gender in Chapter I of this Part and section of this chapter.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
D)1.	vb	perfect	active	2nd	f	s = naṣarti
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-t-/	/-i/	/∅/ (you supported)
2.	vb	perfect	active	2nd	f	p = naṣartunna
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tun-/	/∅/	/-na/ (you supported)

E)1.	vb	perfect	active	1st		s = naṣartu
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tu/	∅	/∅/ (I supported)
2.	vb	perfect	active	1st	(3)	p = naṣarnā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-nā/	∅	/-nā/ (we supported)

GROUP II

A)	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	perfect	passive	3rd	m	s = nuṣira
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-a/	/∅/	/∅/ (he was supported)
2.	vb	perfect	passive	3rd	m	d = nuṣirā
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/∅/	/∅/	/-ā/ (they two were supported)
3.	vb	perfect	passive	3rd	m	p = nuṣirū
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/∅/	/-ū/	/∅/ (they were supported)

- (3) With first person neither the masculine nor the feminine occurs. See section of Gender in Chapter I of this Part and section of this chapter.

B)	Verb-base	Aspect	Voice	Person	Gender	Number
1.	vb	perfect	passive	3rd	f	s = nuṣirat /∅/ (she was supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-a-/	/-t/	
2.	vb	perfect	passive	3rd	f	d = nuṣiratā /∅/ (they two were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-a-/	/-t-/	/-ā/
3.	vb	perfect	passive	3rd	f	p = nuṣirna /∅/ (they were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/∅/	/∅/	/-na/
<hr/>						
C) 1.	vb	perfect	passive	2nd	m	s = nuṣirta /∅/ (you were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-t-/	/-a/	/∅/
2.	vb	perfect	passive	2nd		d = nuṣirtumā /∅/ (you two were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-tum/	∅	/-ā/
3.	vb	perfect	passive	2nd	m	p = nuṣirtum /∅/ (you were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-tum/	/∅/	/∅/
<hr/>						
D) 1.	vb	perfect	passive	2nd	f	s = nuṣirti /∅/ (you were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-t-/	/-i/	/∅/
2.	vb	perfect	passive	2nd	f	p = nuṣirtunna /∅/ (you were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-tun/	/∅/	/-na/
<hr/>						
E) 1.	vb	perfect	passive	1st		s = nuṣirtu /∅/ (I was supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-tu/	∅	/∅/
2.	vb	perfect	passive	1st		p = nuṣirnā /∅/ (we were supported)
	/-n-ṣ-r-/	/-u-i-/	/-u-i-/	/-nā/	∅	/-nā/

GROUP III

A)	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	active	3rd	m	s = i̇ansuru /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /i-/ /∅/ /-u/ (he supports)
2.	vb	imperfect	active	3rd	m	d = i̇ansurāni /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /i-/ /∅/ /-āni/ (they two support)
3.	vb	imperfect	active	3rd	m	p = i̇ansurūna /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /i-/ /-ū-/ /-na/ (they support)
<hr/>						
B)1.	vb	imperfect	active	3rd	f	s = ṫansuru /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /∅/ /t-/ /-u/ (she supports)
2.	vb	imperfect	active	3rd	f	d = ṫansurāni /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /∅/ /t-/ /-āni/ (they two support)
3.	vb	imperfect	active	3rd	f	p = i̇ansurna /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /i-/ /∅/ /-na/ (they support)
<hr/>						
C)1.	vb	imperfect	active	2nd	m	s = ṫansuru /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /t-/ /∅/ /-u/ (you support)
2.	vb	imperfect	active	2nd		d = ṫansurāni /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /t-/ ∅ /-āni/ (you two support)
3.	vb	imperfect	active	2nd	m	p = ṫansurūna /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /t-/ /-ū-/ /-na/ (you support)

D)	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	active	2nd	f	s = tanṣurīna /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /t-/ /-īna/ /∅/ (you support)
2.	vb	imperfect	active	2nd	f	p = tanṣurna /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /t-/ /∅/ /-na/ (you support)

E) 1.	vb	imperfect	active	1st		s = ?anṣuru /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /?/ ∅ /-u/ (I support)
2.	vb	imperfect	active	1st		p = nanṣuru /-n-ṣ-r-/ /-a--u-/ /-a--u-/ /n--u/ ∅ /n--u/ (we support)

GROUP IV

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
A) 1.	vb	imperfect	passive	3rd	m	s = iṅṣaru /-n-ṣ-r-/ /-u--a-/ /-u--a-//i-/ /i-/ /-u/ (he is supported)
2.	vb	imperfect	passive	3rd	m	d = iṅṣarāni /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /i-/ /i-/ /-āni/ (they two are supported)
3.	vb	imperfect	passive	3rd	m	p = iṅṣarūna /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /i-/ /-ū-/ /-na/ (they are supported)

B)	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	passive	3rd	f	s = tunṣaru /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /∅/ /t-/ /-u/ (she is supported)
2.	vb	imperfect	passive	3rd	f	d = tunṣarāni /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /∅/ /t-/ /-āni/ (they two are supported)
3.	vb	imperfect	passive	3rd	f	p = iunṣarna /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /i-/ /∅/ /-na/ (they are supported)
<hr/>						
C)1.	vb	imperfect	passive	2nd	m	s = tunṣaru /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /t-/ /∅/ /-u/ (you are supported)
2.	vb	imperfect	passive	2nd		d = tunṣarāni /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /t-/ ∅ /-āni/ (you two are supported)
3.	vb	imperfect	passive	2nd	m	p = tunṣarūna /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /t-/ /-ū-/ /-na/ (you are supported)
<hr/>						
D)1.	vb	imperfect	passive	2nd	f	s = tunṣarīna /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /t-/ /-īna/ /∅/ (you are supported)
2.	vb	imperfect	passive	2nd	f	p = tunṣarna /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /t-/ /∅/ /-na/ (you are supported)
<hr/>						
E)1.	vb	imperfect	passive	1st		s = ?unṣaru /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /?/ ∅ /-u/ (I am supported)
2.	vb	imperfect	passive	1st		p = nunṣaru /-n-ṣ-r-/ /-u--a-/ /-u--a-/ /n--u/ ∅ /n--u/ (we are supported)

Discussioni) Verb-base

We see throughout the class of conjugations on pages 55 - 60 that the verb-base moneme, as a sign, is a class of only one allomorph whose phonological form is /-n-ṣ-r-/.

In addition to the above conjugations, we have carried out conjugations with other examples of verb-base monemes in order to find out if each of the said verb-bases is also a class of only one allomorph as it is the case with "/-n-ṣ-r-/" . The result in each class of conjugations is that the verb-base moneme, is also a class of only one allomorph. We give examples of such verb-bases below and these will be used in the following discussion.

(verb-label = class of conjugations, i.e. of forms having the same verb-base. R = in relation to α in its capacity of having . . . , s = distinctive function in grammar.)

<u>Verb-label</u>	<u>Meaning in infinitive</u>	<u>Allomorph of verb-base</u>	
1. naṣara	to support (4)	/-n-ṣ-r-/Rs	"naṣara"
2. kataba	to write	/-k-t-b-/Rs	"kataba"
3. darasa	to study	/-d-r-s-/Rs	"darasa"
4. ḍaraba	to hit	/-ḍ-r-b-/Rs	"ḍaraba"
5. fataḥa	to open	/-f-t-ḥ-/Rs	"fataḥa"
6. ḥalima	to know	/-ḥ-l-m-/Rs	"ḥalima"

(4) We are using the form of the complex plereme of third person masculine singular, when in the perfect, as a title for each class of conjugations and translate it into English by the infinitive, e.g. naṣara (to support) instead of (he supported).

<u>Verb-label</u>	<u>Meaning in infinitive</u>	<u>Allomorph of verb-base</u>
7. ħafiḏa	to memorise	/-ħ-f-ḏ-/Rs "ħafiḏa"
8. daħraḏa	to roll	/-d-ħ-r-ḏ-/Rs "daħraḏa"
9. farraħa	to make happy	/-f-r-r-ħ-/Rs "farraħa"
10. baḑeara	to disperse	/-b-ḑ-e-r-/Rs "baḑeara"
11. sābaqa	to race or contend	/-s-b-q-/Rs "sābaqa"
12. bāḑa	to sell	/-b-ḑ-/Rs "bāḑa"
13. qāla	to say	/-q-l-/Rs "qāla"
14. nāla	to achieve	/-n-l-/Rs "nāla"
15. zāħa	to push aside	/-z-ħ-/Rs "zāħa"

II Aspect and Voice

Looking back at the tables on pp. 55-60 we find that throughout group I, the allomorphs of the perfect and the active monemes have one phonological form /-a-a-/ as in "/naṣara/" (he supported). Also in group II, the perfect and the passive monemes are realised with the phonological form /-u-i-/ as in "/nuṣira/" (he was supported). In group III, the phonological form /-a--u-/ is representing both of the monemes imperfect and active as in "/iṣṣuru/" (he supports) while in group IV the monemes imperfect and passive are represented by the phonological form /-u--a-/ as in "/iṣṣaru/" (he is supported). This is due to the fact that /-a-a-/, /-u-i-/, /-a--u-/ and /-u--a-/ are amalgamated phonological forms ⁽⁵⁾ of the allomorphs of the monemes: perfect and active, perfect and passive, imperfect and active, imperfect and passive respectively.

(5) See amalgamation in Chapter IV of Part I.

The said monemes differ from "à" and "le" in French in the sense that each of the latter has a separate realisation while the former do not. In Part I, chapter IV section (c), of amalgamation, we have shown that "à" has the realisation /a/Rs "à" (6) and "le" has the realisation /l/Rs "le". On the other hand, in French we have the realisation /o/Rs "à le" which is an amalgamated realisation of the sign "à" and of the sign "le".

Now having no separate realisations for the perfect, imperfect, active and passive monemes is theoretically acceptable on the grounds that the monemes in question are functionally different as demonstrated in the commutations in chapter I of this Part. (7)

The allomorphs of the perfect, imperfect, active and passive monemes, in the case of the class of conjugations with the verb-base "/-n-s-r-/", can now be presented.

~ = as opposed to

R = in relation to or in its capacity of having a . . . ,

s = distinctive function in grammar.

An allomorph is generally written as having three parts: the phonological form, R which means in relation to or in its capacity of having, and the distinctive function in grammar which is represented by s. However, in the case of amalgamation, where one phonological form is a phonological form of allomorphs of two distinct monemes, we modify this presentation and give the phonological form of the allomorph of the moneme concerned plus the phonological

(6) R = in relation to or in its capacity of having a . . . ,
s = distinctive function in grammar.

(7) See sections 2 & 3 of Aspect and Voice in ch. I of this Part.

form of the allomorph of the moneme with which it commutes plus the R plus its distinctive function. Thus, for example, /-a-a-/ is the phonological form of the allomorph of the "active" moneme and of the allomorph of the "perfect" moneme. However, /-a-a-/ being the phonological form of the allomorph of the active moneme, it commutes with the phonological form of the allomorph of the passive moneme, namely /-u-i-/. Thus the allomorph of the active moneme is /-a-a-/~/-u-i-/Rs "active". /-a-a-/ being the phonological form of the allomorph of the perfect moneme, it commutes with /-a--u-/, the phonological form of the allomorph of the imperfect moneme; thus we write the allomorph of the perfect moneme as /-a-a-/~/-a--u-/Rs "perfect".

perfect

/-a-a-/~/-a--u-/Rs "perfect"

/-u-i-/~/-u--a-/Rs "perfect"

imperfect

/-a--u-/~/-a-a-/Rs "imperfect"

/-u--a-/~/-u-i-/Rs "imperfect"

active

/-a-a-/~/-u-i-/Rs "active"

/-a--u-/~/-u--a-/Rs "active"

passive

/-u-i-/~/-a-a-/Rs "passive"

/-u--a-/~/-a--u-/Rs "passive"

As the perfect, imperfect, active and passive monemes occur in the constructions of other complex pleremes, we give below the amalgamated phonological forms of the allomorphs of these monemes as they occur in conjugation classes of complex pleremes which correspond to the ones whose verb-bases are given in section I of this chapter.

1.0 Allomorphs of Aspect and Voice monemes in complex pleremes whose verb-bases contain three consonants or more

(Nos. 1 - 11 on pages 61 - 62)

1.1 In the following, we give the phonological forms of the allomorphs of the monemes: perfect, imperfect, active and passive that occur in the conjugation classes of complex pleremes whose verb-bases are of three or more consonants, e.g. "/-n-ṣ-r-/" and "/d-ḥ-r-ṣ-/" (Nos. 1 - 11 on pages 61-62) That is to say, for example, in the conjugations with the verb-base "/-n-ṣ-r-/" in the active, only one allomorph of the perfect whose phonological form is /-a-a-/ occurs in "/naṣara/" (he supported) and only one allomorph of the imperfect of the phonological form /-a--u-/, occurs as in "/iaṣuru/" (he supports), as opposed to the situation found with two consonant complex pleremes which have two allomorphs as we shall see below.

A. perfect

	<u>active</u>		<u>passive</u>
Phonological forms of the allomorphs of the perfect and active monemes	Complex pleremes containing the two monemes	Phonological forms of the allomorphs of the perfect and passive monemes	Complex pleremes containing the two monemes
1. /-a-a-/	"/naṣara/"	/-u-i-/	"/nuṣira/"
2. /-a-a-/	"/kataba/"	/-u-i-/	"/kutiba/"
3. /-a-a-/	"/darasa/"	/-u-i-/	"/durisa/"
4. /-a-a-/	"/daraba/"	/-u-i-/	"/duriba/"
5. /-a-a-/	"/fataḥa/"	/-u-i-/	"/futīḥa/"
6. /-a-i-/	"/ṣalima/"	/-u-i-/	"/ṣulima/"
7. /-a-i-/	"/ḥafīḥa/"	/-u-i-/	"/ḥufīḥa/"
8. /-a--a-/	"/daḥraṣa/"	/-u--i-/	"/duḥriṣa/"
9. /-a--a-/	"/farrāḥa/"	/-u--i-/	"/furriḥa/"
10. /-a--a-/	"/baṣara/"	/-u--i-/	"/buṣira/"
11. /-ā-a-/	"/sābaqa/"	/-ū-i-/	"/sūbiqa/"

B) imperfect

		<u>active</u>		<u>passive</u>	
Phonological forms of the allomorphs of the imperfect and active monemes		Complex pleremes containing the two monemes		Phonological forms of the allomorphs of the imperfect and passive monemes	Complex pleremes containing the two monemes
1. /-a--u-/		ʔi.ansuru/"		/-u--a-/	"/i.ansaru/"
2. /-a--u-/		"/i.aktubu/"		/-u--a-/	"/i.aktabu/"
3. /-a--u-/		"/i.adrusu/"		/-u--a-/	"/i.adrasu/"
4. /-a--i-/		"/i.adribu/"		/-u--a-/	"/i.adrabu/"
5. /-a--a-/		"/i.aftahu/"		/-u--a-/	"/i.aftahu/"
6. /-a--a-/		"/i.aʃlamu/"		/-u--a-/	"/i.aʃlamu/"
7. /-a--a-/		"/i.aʃfaḥu/"		/-u--a-/	"/i.aʃfaḥu/"
8. /-u-a--i-/		"/i.indaʔhrižu/"		/-u-a--a-/	"/i.indaʔhražu/"
9. /-u-a--i-/		"/i.ufarriḥu/"		/-u-a--a-/	"/i.ufarraḥu/"
10. /-u-a--i-/		"/i.ubaʃoʔiru/"		/-u-a--a-/	"/i.ubaʃoʔaru/"
11. /-u-ā-i-/		"/i.usābiḡu/"		/-u-ā-a-/	"/i.usābaḡu/"

1.2 Representation of allomorphs of Aspect and Voice monemes

The allomorphs of the monemes of the perfect, imperfect, active and passive monemes, whose phonological forms are given in subsection (1.1) above, can be represented as follows:

(R = in relation to or in its capacity of having . . . ,)

(s = distinctive function in grammar.)

(~ = as opposed to)

A perfect

1. /-a-a-/~/-a--u-/Rs "perfect"
2. /-u-i-/~/-u--a-/Rs "perfect"
3. /-a-a-/~/-a--i-/Rs "perfect"
4. /-a-a-/~/-a--a-/Rs "perfect"

5. /-a-i-/~/-a--a-/Rs "perfect"
6. /-a--a-/~/-u-a--i-/Rs "perfect"
7. /-u--i-/~/-u-a--a-/Rs "perfect"
8. /-ā-a-/~/-u-ā-i-/Rs "perfect"
9. /-ū-i-/~/-u-ā-a-/Rs "perfect"

B imperfect

1. /-a--u-/~/-a-a-/Rs "imperfect"
2. /-u--a-/~/-u-i-/Rs "imperfect"
3. /-a--i-/~/-a-a-/Rs "imperfect"
4. /-a--a-/~/-a-a-/Rs "imperfect"
5. /-a--a-/~/-a-i-/Rs "imperfect"
6. /-u-a--i-/~/-a--a-/Rs "imperfect"
7. /-u-a--a-/~/-u--i-/Rs "imperfect"
8. /-u-ā-i-/~/-ā-a-/Rs "imperfect"
9. /-u-ā-a-/~/-ū-i-/Rs "imperfect"

C active

1. /-a-a-/~/-u-i-/Rs "active"
2. /-a--u-/~/-u--a-/Rs "active"
3. /-a-i-/~/-u-i-/Rs "active"
4. /-a--a-/~/-u--a-/Rs "active"
5. /-a--a-/~/-u--i-/Rs "active"
6. /-u-a--i-/~/-u-a--a-/Rs "active"
7. /-ā-a-/~/-ū-i-/Rs "active"
8. /-u-ā-i-/~/-u-ā-a-/Rs "active"

D passive

1. /-u-i-/~/-a-a-/Rs "passive"
2. /-u--a-/~/-a--u-/Rs "passive"

3. /-u-i-/~/-a-i-/Rs "passive"
4. /-u--a-/~/-a--a-/Rs "passive"
5. /-u--i-/~/-a--a-/Rs "passive"
6. /-u-a--a-/~/-u-a--i-/Rs "passive"
7. /-ū-i-/~/-ā-a-/Rs "passive"
8. /-u-ā-a-/~/-u-ā-i-/Rs "passive"

2.0 Allomorphs of Aspect and Voice monemes in complex pleremes whose verb-bases contain two consonants (Nos. 12-15)

2.1 As we did with the verb-base "/-n-ṣ-r-/" and in the same manner, we give below the class of conjugations with a verb-base of two consonants "/-b-ṣ-/" wherein we have two allomorphs, e.g. of perfect moneme, occurring in one conjugation class, as in "/bāṣa/" (he sold) and "/biṣna/" (they sold, feminine).

2.2 Class of conjugations with verb-base of two consonants, "/-b-ṣ-/",

Group I

A.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	perfect	active	3rd	m	s = bāṣa
	/-b-ṣ-/ /	/-ā-/ /	/-a-/ /	/-a/ /	/∅/ /	/∅/ (he sold)
2.	vb	perfect	active	3rd	m	d = bāṣā
	/-b-ṣ-/ /	/-ā-/ /	/-ā-/ /	/∅/ /	/∅/ /	/-ā/ (they two sold)
3.	vb	perfect	active	3rd	m	p = bāṣū
	/-b-ṣ-/ /	/-ā-/ /	/-ā-/ /	/∅/ /	/-ū/ /	/∅/ (they sold)

B.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb /-b- ḡ -/	perfect /-ā-/	active /-ā-/	3rd /-a-/	f /-t/	s = bā ^ḡ at /∅/ (she sold)
2.	vb /-b- ḡ -/	perfect /-ā-/	active /-ā-/	3rd /-a-/	f /-t-/	d = bā ^ḡ atā /-ā/ (they two sold)
3.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	3rd /∅/	f /∅/	p = bi ^ḡ na /-na/ (they sold)
<hr/>						
C.1.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	2nd /-t-/	m /-a/	s = bi ^ḡ ta /∅/ (you sold)
2.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	2nd /-tum-/	∅	d = bi ^ḡ tumā /-ā/ (you two sold)
3.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	2nd /-tum /	m /∅/	p = bi ^ḡ tum /∅/ (you sold)
<hr/>						
D.1.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	2nd /-t-/	f /-i/	s = bi ^ḡ ti /∅/ (you sold)
2.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	2nd /-tun-/	f /∅/	p = bi ^ḡ tunna /na/ (you sold)
<hr/>						
E.1.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	1st /-tu/	∅	s = bi ^ḡ tu /∅/ (I sold)
2.	vb /-b- ḡ -/	perfect /-i-/	active /-i-/	1st /-nā/	∅	p = bi ^ḡ nā /-nā/ (we sold)

Group II

A.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	perfect	passive	3rd	m	s = biḡa
	/-b-ḡ-/	/-ī-/	/-ī-/	/-a/	/∅/	/∅/ (he was sold)
2.	vb	perfect	passive	3rd	m	d = biḡā
	/-b-ḡ-/	/-ī-/	/-ī-/	/∅/	/∅/	/-ā/ (they two were sold)
3.	vb	perfect	passive	3rd	m	p = biḡū
	/-b-ḡ-/	/-ī-/	/-ī-/	/∅/	/-ū/	/∅/ (they were sold)
<hr/>						
B.1.	vb	perfect	passive	3rd	f	s = biḡat
	/-b-ḡ-/	/-ī-/	/-ī-/	/-a-/	/-t/	/∅/ (she was sold)
2.	vb	perfect	passive	3rd	f	d = biḡatā
	/-b-ḡ-/	/-ī-/	/-ī-/	/-a-/	/-t/	/-ā/ (they two were sold)
3.	vb	perfect	passive	3rd	f	p = buḡna
	/-b-ḡ-/	/-u-/	/-u-/	/∅/	/∅/	/-na/ (they were sold)
<hr/>						
C.1.	vb	perfect	passive	2nd	m	s = buḡta
	/-b-ḡ-/	/-u-/	/-u-/	/-t-/	/-a/	/∅/ (you were sold)
2.	vb	perfect	passive	2nd		d = buḡtumā
	/-b-ḡ-/	/-u-/	/-u-/	/-tum/	∅	/-ā/ (you two were sold)
3.	vb	perfect	passive	2nd	m	p = buḡtum
	/-b-ḡ-/	/-u-/	/-u-/	/-tum/	/∅/	/∅/ (you were sold)
<hr/>						
D.1.	vb	perfect	passive	2nd	f	s = buḡti
	/-b-ḡ-/	/-u-/	/-u-/	/-t-/	/-i/	/∅/ (you were sold)
2.	vb	perfect	passive	2nd	f	p = buḡtunna
	/-b-ḡ-/	/-u-/	/-u-/	/-tun-/	/∅/	/-na/ (you were sold)

E.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	perfect	passive	1st	∅	s = buḥtu /∅/ (I was sold)
	/-b-ḥ-/	/-u-/	/-u-/	/-tu/		
2.	vb	perfect	passive	1st	∅	p = buḥnā /-nā/ (we were sold)
	/-b-ḥ-/	/-u-/	/-u-/	/-nā/		

Group III

A.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	active	3rd	m	s = iabiḥu /∅/ /-u/ (he sells)
	/-b-ḥ-/	/-a-ī-/	/-a-ī-/	/i-/	/∅/	
2.	vb	imperfect	active	3rd	m	d = iabiḥāni /-āni/ (they two sell)
	/-b-ḥ-/	/-a-ī-/	/-a-ī-/	/i-/	/∅/	
3.	vb	imperfect	active	3rd	m	p = iabiḥūna /-ū-/ /-na/ (they sell)
	/-b-ḥ-/	/-a-ī-/	/-a-ī-/	/i-/	/-ū-/	
B.1.	vb	imperfect	active	3rd	f	s = tabiḥu /t-/ /-u/ (she sells)
	/-b-ḥ-/	/-a-ī-/	/-a-ī-/	/∅/	/t-/	
2.	vb	imperfect	active	3rd	f	d = tabiḥāni /-āni/ (they two sell)
	/-b-ḥ-/	/-a-ī-/	/-a-ī-/	/∅/	/t-/	
3.	vb	imperfect	active	3rd	f	p = iabiḥna /-na/ (they sell)
	/-b-ḥ-/	/-a-i-/	/-a-i-/	/i-/	/∅/	

C.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	active	2nd	m	s = tabī <u>ḡ</u> u
	/-b- <u>ḡ</u> -/	/-a-ī-/	/-a-ī-/	/t-/	/∅/	/-u/ (you sell)
2.	vb	imperfect	active	2nd	∅	d = tabī <u>ḡ</u> āni
	/-b- <u>ḡ</u> -/	/-a-ī-/	/-a-ī-/	/t-/		/-āni/ (you two sell)
3.	vb	imperfect	active	2nd	m	p = tabī <u>ḡ</u> ūna
	/-b- <u>ḡ</u> -/	/-a-ī-/	/-a-ī-/	/t-/	/-ū-/	/-na/ (you sell)

D.1.	vb	imperfect	active	2nd	f	s = tabī <u>ḡ</u> īna
	/-b- <u>ḡ</u> -/	/-a-ī-/	/-a-ī-/	/t-/	/-īna/	/∅/ (you sell)
2.	vb	imperfect	active	2nd	f	p = tabī <u>ḡ</u> na
	/-b- <u>ḡ</u> -/	/-a-i-/	/-a-i-/	/t-/	/∅/	/-na/ (you sell)

E.1.	vb	imperfect	active	1st		s = ?abī <u>ḡ</u> u
	/-b- <u>ḡ</u> -/	/-a-ī-/	/-a-ī-/	/?/	∅	/-u/ (I sell)
2.	vb	imperfect	active	1st		p = nabī <u>ḡ</u> u
	/-b- <u>ḡ</u> -/	/-a-ī-/	/-a-ī-/	/n--u/	∅	/n--u/ (we sell)

Group IV

A.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	passive	3rd	m	s = i <u>ḡ</u> bā <u>ḡ</u> u
	/-b- <u>ḡ</u> -/	/-u-ā-/	/-u-ā-/	/i-/	/∅/	/-u/ (he is sold)
2.	vb	imperfect	passive	3rd	m	d = i <u>ḡ</u> bā <u>ḡ</u> āni
	/-b- <u>ḡ</u> -/	/-u-ā-/	/-u-ā-/	/i-/	/∅/	/-āni/ (they two are sold)
3.	vb	imperfect	passive	3rd	m	p = i <u>ḡ</u> bā <u>ḡ</u> ūna
	/-b- <u>ḡ</u> -/	/-u-ā-/	/-u-ā-/	/i-/	/-ū-/	/-na/ (they are sold)

B.	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
1.	vb	imperfect	passive	3rd	f	s = tubā <u>ʕ</u> u
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/∅/	/t-/	/-u/ (she is sold)
2.	vb	imperfect	passive	3rd	f	d = tubā <u>ʕ</u> āni
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/∅/	/t-/	/-āni/ (they two are sold)
3.	vb	imperfect	passive	3rd	f	p = iuba <u>ʕ</u> na
	/-b- <u>ʕ</u> -/	/-u-a-/	/-u-a-/	/i-/	/∅/	/-na/ (they are sold)
<hr/>						
C.1.	vb	imperfect	passive	2nd	m	s = tubā <u>ʕ</u> u
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/t-/	/∅/	/-u/ (you are sold)
2.	vb	imperfect	passive	2nd	∅	d = tubā <u>ʕ</u> āni
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/t-/	∅	/-āni/ (you two are sold)
3.	vb	imperfect	passive	2nd	m	p = tubā <u>ʕ</u> ūna
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/t-/	/-ū-/	/-na/ (you are sold)
<hr/>						
D.1.	vb	imperfect	passive	2nd	f	s = tubā <u>ʕ</u> īna
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/t-/	/-īna/	/∅/ (you are sold)
2.	vb	imperfect	passive	2nd	f	p = tuba <u>ʕ</u> na
	/-b- <u>ʕ</u> -/	/-u-a-/	/-u-a-/	/t-/	/∅/	/-na/ (you are sold)
<hr/>						
E.1.	vb	imperfect	passive	1st	∅	s = <u>ʔ</u> ubā <u>ʕ</u> u
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/ʔ/	∅	/-u/ (I am sold)
2.	vb	imperfect	passive	1st	∅	p = nubā <u>ʕ</u> u
	/-b- <u>ʕ</u> -/	/-u-ā-/	/-u-ā-/	/n--u/	∅	/n--u/ (we are sold)

2.3 Phonological forms of the allomorphs of the Aspect and Voice monemes as they occur in complex pleremes whose verb-bases are of two consonants.

Below, we give the phonological forms of the allomorphs of the monemes of Aspect and Voice as they occur with the verb-bases given on page 62 (Nos.12- 15) of this chapter.

A. perfect

	<u>active</u>	<u>passive</u>
	Phonological forms of the allomorphs of the perfect and active monemes	Phonological forms of the allomorphs of the perfect and passive monemes
12. a.	/-ā-/	/-ī-/
b.	/-i-/	/-u-/
13. a.	/-ā-/	/-ī-/
b.	/-u-/	/-i-/
14. a.	/-ā-/	/-ī-/
b.	/-i-/	/-u-/
15. a.	/-ā-/	/-ī-/
b.	/-i-/	/-u-/

B. imperfect

	<u>active</u>	<u>passive</u>
	Phonological forms of the allomorphs of the imperfect and active monemes	Phonological forms of the allomorphs of the imperfect and passive monemes
12. a.	/-a-ī-/	/-u-ā-/
b.	/-a-i-/	/-u-a-/
13. a.	/-a-ū-/	/-u-ā-/
b.	/-a-u-/	/-u-a-/
14. a.	/-a-ā-/	/-u-ā-/
b.	/-a-a-/	/-u-a-/
15. a.	/-u-ī-/	/-u-ā-/
b.	/-u-i-/	/-u-a-/

2.4 Representation of allomorphs of monemes of Aspect and voice in complex pleremes whose verb-bases are of two consonants.

The allomorphs of the perfect, imperfect, active and passive, whose phonological forms are listed in sub-section (2.3) above, can be represented as follows:

(R = in relation to or in its capacity of having a ...,)

(s = distinctive function in grammar.,)

(~ = as opposed to)

A. perfect

1. /-ā-/~/-a-ī-/Rs "perfect"
2. /-i-/~/-a-i-/Rs "perfect"
3. /-ā-/~/-a-ū-/Rs "perfect"
4. /-u-/~/-a-u-/Rs "perfect"
5. /-ā-/~/-a-ā-/Rs "perfect"
6. /-i-/~/-a-a-/Rs "perfect"
7. /-ā-/~/-u-ī-/Rs "perfect"
8. /-i-/~/-u-i-/Rs "perfect"

B. imperfect

1. /-a-ī-/~/-ā-/Rs "imperfect"
2. /-a-i-/~/-i-/Rs "imperfect"
3. /-a-ū-/~/-ā-/Rs "imperfect"
4. /-a-u-/~/-u-/Rs "imperfect"
5. /-a-ā-/~/-ā-/Rs "imperfect"
6. /-a-a-/~/-i-/Rs "imperfect"
7. /-u-ī-/~/-ā-/Rs "imperfect"
8. /-u-i-/~/-i-/Rs "imperfect"

C. active

1. /-ā-/~/-ī-/Rs "active"
2. /-u-/~/-i-/Rs "active"
3. /-a-ū-/~/-u-ā-/Rs "active"
4. /-a-u-/~/-u-a-/Rs "active"
5. /-a-ī-/~/-u-ā-/Rs "active"
6. /-i-/~/-u-/Rs "active"
7. /-a-i-/~/-u-a-/Rs "active"
8. /-a-ā-/~/-u-ā-/Rs "active"
9. /-a-a-/~/-u-a-/Rs "active"
10. /-u-ī-/~/-u-ā-/Rs "active"
11. /-u-i-/~/-u-a-/Rs "active"

D. passive

1. /-ī-/~/-ā-/Rs "passive"
2. /-i-/~/-u-/Rs "passive"
3. /-u-ā-/~/-a-ū-/Rs "passive"
4. /-u-a-/~/-a-u-/Rs "passive"
5. /-u-ā-/~/-a-ī-/Rs "passive"
6. /-u-/~/-i-/Rs "passive"
7. /-u-a-/~/-a-i-/Rs "passive"
8. /-u-ā-/~/-a-ā-/Rs "passive"
9. /-u-a-/~/-a-a-/Rs "passive"
10. /-u-ā-/~/-u-ī-/Rs "passive"
11. /-u-a-/~/-u-i-/Rs "passive"

III The imperative

We have demonstrated, in chapter I of this Part, that the imperative moneme excludes the monemes of Aspect, Voice and Person because with the imperative there is no completeness of action (perfect) or incompleteness of action (imperfect); no opposition between the active and the passive and no opposition between the third person, second person and first person.

Before going into the discussion of the realisations of the constituent monemes of complex pleremes in the imperative, we give below tables of the phonological forms of the allomorphs of the said constituent monemes as they occur in complex pleremes which are of the conjugation class with the verb-base "/-n-ṣ-r-/" . We have divided the tables into two parts in accordance with the monemes of Gender.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
A)1.	vb		imperative		m	s = ?unṣur
	/-n-ṣ-r-/ /		/?u--u-/ /		/∅/ /	/∅/ (support!)
2.	vb		imperative			d = ?unṣurā
	/-n-ṣ-r-/ /		/?u--u-/ /		∅	/-ā/ ⁽⁸⁾ (you two support!)
3.	vb		imperative		m	p = ?unṣurū
	/-n-ṣ-r-/ /		/?u--u-/ /		/-ū/ /	/∅/ (support!)
<hr/>						
B)1.	vb		imperative		f	s = ?unṣurī
	/-n-ṣ-r-/ /		/?u--u-/ /		/-ī/ /	/∅/ (support!)
2.	vb		imperative		f	p = ?unṣurna
	/-n-ṣ-r-/ /		/?u--u-/ /		/∅/ /	/-na/ (support!)

(8) No monemes of Gender occur with the dual and so we have given the dual only once. See chapter I of this Part.

Below we shall discuss the realisations of the constituent monemes:

1. verb-base
2. imperative

The rest of the constituent monemes, their realisations are discussed in the section of Person, Gender and Number.

1. verb-base: In the context of the imperative moneme, the verb-base moneme has the same realisation as the one in the context of the perfect moneme or of the imperfect moneme. (See tables above and tables on pages 55-60). That is, in the imperative, the verb-base moneme has the realisation of the phonological form /-n-s-r-/ which is the same as the one in the contexts of the perfect moneme and the imperfect moneme as in "/?unṣur/" (support!), "/naṣara/" (he supported) and "/iaṣuru/" (he supports) respectively. Thus, we need not discuss the realisation of the verb-base moneme again.

2. imperative

The imperative moneme, like the perfect and the imperfect monemes, has different realisations. We give below the phonological forms of the allomorphs of the said moneme as they occur in conjugation classes of complex pleremes which correspond to the ones whose verb-bases are given in section I of this chapter.

2.1 Allomorphs of the imperative moneme in complex pleremes whose verb-bases are of three consonants or more (nos. 12-15 on page 62).

2.1.1 In the following, we give the phonological forms of the allomorphs of the imperative moneme which occur in the conjugation classes of complex pleremes whose verb-bases are of three or more consonants as in tables on page 77 above.

Phonological forms of the allomorphs of the imperative moneme	Complex pleremes containing the imperative moneme
1. /ʔu--u-/	"/ʔunṣur/"
2. /ʔu--u-/	"/ʔuktub/"
3. /ʔu--u-/	"/ʔudrus/"
4. /ʔi--i-/	"/ʔidrib/"
5. /ʔi--a-/	"/ʔiftaḥ/"
6. /ʔi--a-/	"/ʔiṣlam/"
7. /ʔi--a-/	"/ʔiḥfaḍ/"
8. /-a--i-/	"/daḥriḏ/"
9. /-a--i-/	"/farriḥ/"
10. /-a--i-/	"/baʔir/"
11. /-ā-i-/	"/sābiq/"

2.1.2 Representation of allomorphs of imperative moneme

The allomorphs of the imperative moneme whose phonological forms are given in sub-section (2.1.1) above, can be represented as follows:

1. /ʔu--u-/Rs "imperative"
2. /ʔi--i-/Rs "imperative"
3. /ʔi--a-/Rs "imperative"
4. /-a--i-/Rs "imperative"
5. /-ā-i-/Rs "imperative"

2.2 Allomorphs of the imperative moneme in complex pleremes of verb-bases of two consonants.

2.2.1 As we have done with the allomorphs of the imperative moneme in complex pleremes of verb-bases of three or four consonants, below we give the allomorphs of the said moneme in complex pleremes whose verb-base is "/-b-ḡ-/".

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
A)1.	vb		imperative		m	s = biʃ
	/-b-ʃ-/		/-i-/		/∅/	/∅/ (sell!)
2.	vb		imperative		∅	d = biʃā
	/-b-ʃ-/		/-ī-/			/-ā/ (you two sell)
3.	vb		imperative		m	p = biʃū
	/-b-ʃ-/		/-ī-/		/-ū/	/∅/ (sell!)
<hr/>						
B)1.	vb		imperative		f	s = biʃī
	/-b-ʃ-/		/-ī-/		/-ī/	/∅/ (sell!)
2.	vb		imperative		f	p = biʃna
	/-b-ʃ-/		/-i-/		/∅/	/-na/ (sell!)

2.2.2 Phonological forms of allomorphs of the imperative moneme as they occur in complex pleremes of the verb-bases of two consonants.

Below we give the phonological forms of the allomorphs of the imperative moneme in complex pleremes whose verb-bases are given on page 62, Nos. 12-15.

	<u>Phonological forms of the allomorphs of the imperative moneme</u>		<u>Complex pleremes containing the imperative moneme</u>
12.	a.	/-i-/	"/biʃ/"
	b.	/-ī-/	"/biʃī/"
13.	a.	/-u-/	"/qul/"
	b.	/-ū-/	"/qūlī/"
14.	a.	/-a-/	"/nal/"
	b.	/-ā-/	"/nālī/"
15.	a.	/-i-/	"/ziʃ/"
	b.	/-ī-/	"/ziʃī/"

2.2.3 Representation of the allomorphs of the imperative moneme

We represent below the allomorphs of the imperative moneme whose phonological forms are given in subsection (2.2.2) above.

1. /-i-/Rs "imperative"
2. /-ī-/Rs "imperative"
3. /-u-/Rs "imperative"
4. /-ū-/Rs "imperative"
5. /-a-/Rs "imperative"
6. /-ā-/Rs "imperative"

IV Statement of distribution of allomorphs of the monemes of Aspect and Voice

1.0 Distribution of allomorphs of monemes of Aspect and Voice with respect to complex pleremes whose verb-bases are of three consonants or more.

On pages (61-62) of this chapter, we have given a list of the different verb-bases. These verb-bases can be grouped together in terms of the set of allomorphs of the Aspect monemes that they take. For example, the verb-bases "/-n-ṣ-r-/", "/-k-t-b-/" and "/-d-r-s-/" take the set of allomorphs of the Aspect monemes whose phonological forms are:

perfect = /-a-a-/ as in "/naṣara/", /-u-i-/ as in "/nuṣira/".

imperfect = /-a--u-/ as in "/iaṣuru/", /-u--a-/ as in "/iṣaru/".

As there are verb-bases, which take different sets of allomorphs of the Aspect monemes, hence we have assigned numbers to the verb-bases grouped together, which differ from those of other groups in terms of the sets of allomorphs of the monemes of Aspect that they take. For example, the verb-base "/-n-ṣ-r-/" belongs to group No. (1) due to the fact that in that group we have the verb-bases that take the above allomorphs of the perfect and imperfect monemes.

1.1 Conjugation classes with verb-bases of three or four consonants

The conjugation classes given below are set up in terms of verb-bases taking the same allomorphs of the Aspect monemes.

(1)	(2)	(3)	(4)	(5)	(6)
"/-n-s-r-/"	"/-d-r-b-/"	"/-f-t-h-/"	"/-ŋ-l-m-/"	"/-d-h-r-ʒ-/"	"/-s-b-g-/"
"/-k-t-b-/"			"/-h-f-d-/"	"/-f-r-r-h-/"	
"/-d-r-s-/"				"/-b-ŋ-θ-r-/"	

1.2 The phonological forms of the allomorphs of the Aspect monemes.

The phonological forms of the allomorphs of the Aspect monemes that the above classes of verb-bases take are as follows:

	perfect		imperfect
1.	/-a-a-/	1.	/-a--u-/
2.	/-u-i-/	2.	/-u--a-/
3.	/-a-i-/	3.	/-a--i-/
4.	/-a--a-/	4.	/-a--a-/
5.	/-u--i-/	5.	/-u-a--i-/
6.	/-ā-a-/	6.	/-u-a--a-/
7.	/-ū-i-/	7.	/-u-ā-i-/
		8.	/-u-ā-a-/

We can now match the groups of verb-bases in (1.1) above to the classes of allomorphs of the monemes of Aspect, i.e. state the distribution of the allomorphs of the monemes of the Aspect paradigm with respect to the verb-bases.

	Number of conjugation class	Number of allomorph of the perfect moneme	Number of allomorph of the imperfect moneme
a.	(1)	(1) and (2)	(1) and (2)
b.	(2)	(1) and (2)	(3) and (2)
c.	(3)	(1) and (2)	(4) and (2)
d.	(4)	(3) and (2)	(4) and (2)
e.	(5)	(4) and (5)	(5) and (6)
f.	(6)	(6) and (7)	(7) and (8)

Note that we have two allomorphs listed for each conjugation class; we return to this below.

1.3 Allomorphs of the monemes of Voice

Having given the phonological forms of the allomorphs of the perfect and the imperfect monemes, we now give the phonological forms of the allomorphs of the active and passive monemes in the same manner we presented the ones of the Aspect monemes.

	active		passive
1.	/-a-a-/	1.	/-u-i-/
2.	/-a--u-/	2.	/-u--i-/
3.	/-a--i-/	3.	/-ū-i-/
4.	/-a--a-/	4.	/-u--a-/
5.	/-a-i-/	5.	/-u-a--a-/
6.	/-ā-a-/	6.	/-u-ā-a-/
7.	/-u-a--i-/		
8.	/-u-ā-i-/		

As we did with the allomorphs of the monemes of Aspect, in this case we shall match the conjugation classes in (11) above to the classes of allomorphs of the Voice monemes, which is as follows:

	Number of conjugation class	Number of allomorph of the active moneme	Number of allomorph of the passive moneme
a.	(1)	(1) and (2)	(1) and (4)
b.	(2)	(1) and (3)	(1) and (4)
c.	(3)	(1) and (4)	(1) and (4)
d.	(4)	(4) and (5)	(1) and (4)
e.	(5)	(4) and (7)	(2) and (5)
f.	(6)	(6) and (8)	(3) and (6)

1.4 Distribution of allomorphs of the monemes of Voice with respect to the monemes of Aspect and vice versa.

The distribution of the allomorphs of the monemes of the Voice monemes with respect to the monemes of Aspect is automatic because the phonological forms of the allomorphs of the monemes of Aspect and of the monemes of Voice are always amalgamated. That is, if the perfect moneme occurs in the complex plereme with the allomorph of the phonological form /-a-a-/, then the phonological form of the allomorph of the active moneme would also be /-a-a-/ since the latter matches the former, owing to the fact that the said phonological forms are amalgamated.

2.0 Distribution of allomorphs of monemes of Aspect and Voice with respect to complex pleremes whose verb-bases are of two consonants.

In complex pleremes whose verb-bases are of two consonants, the

distribution of the allomorphs of the monemes of Aspect and Voice is also governed by (a) verb-base moneme, (b) the monemes of Voice governing the allomorphs of monemes of Aspect and vice versa, as in the case of the said allomorphs in complex pleremes whose verb-bases are of three or four consonants. (see above).

Yet, there is another factor that governs the distribution of the allomorphs in question which we discuss below.

2.1 Distribution of the allomorphs of the monemes of Aspect.

In the conjugation classes on pages 68-73 above, we find that there is an alternation of the allomorphs of the perfect moneme as well as of the imperfect moneme. The alternation in question is actually one of long vowel versus short vowel in terms of the phonological forms of the said allomorphs. That is, the phonological form of one allomorph contains a long vowel while the other contains a short vowel, though not necessarily the same one, e.g. /-ā-/ as in "/bāḡa/" (he sold) and /-i-/ as in "/biḡna/" (they sold, feminine) for the perfect; /-a-ī-/ as in "/iābiḡu/" (he sells) and /-a-i-/ as in "/iābiḡna/" (they sell, feminine) for the imperfect.

Below, we shall state the distribution of the allomorphs of the monemes of Aspect and Voice with respect to the verb-bases of two consonants, in the same fashion we stated the distribution of the said allomorphs with regard to verb-bases of three or four consonants.

2.2 Conjugation Classes of verb-bases of two consonants

Groups of verb-bases in terms of allomorphs of the monemes of Aspect they take.

(7)	(8)	(9)	(10)
"/-b-ḡ-/"	"/-q-l-/"	"/-n-l-/"	"/-z-ḡ-/"

2.3 Phonological forms of allomorphs of Aspect monemes

The above verb-bases take the allomorphs of the Aspect monemes whose phonological forms are:

(For perfect and imperfect monemes, column (a) contains forms with long vowels and column (b) contains forms with short vowels)

perfect		imperfect	
(a)	(b)	(a)	(b)
7. /-ā-/	7. /-i-/	9. /-a-ī-/	9. /-a-i-/
8. /-ī-/	8. /-u-/	10. /-u-ā-/	10. /-u-a-/
		11. /-a-ū-/	11. /-a-u-/
		12. /-a-ā-/	12. /-a-a-/
		13. /-u-ī-/	13. /-u-i-/

To match the verb-bases in (2.2) above to the classes of allomorphs of the monemes of Aspect paradigm, i.e. state the distribution of the allomorphs of the monemes perfect and imperfect, we shall have the following:

Number of the conjugation classes of verb-bases	Numbers of allomorphs of the perfect moneme	Numbers of allomorphs of the imperfect moneme
a. (7)	(7a), (7b), (8a) and (8b)	(9a), (9b), (10a) and (10b)
b. (8)	same as above	(11a), (11b), (10a), and (10b)
c. (9)	same as above	(12a), (12b), (10a), and (10b)
d. (10)	same as above	(13a), (13b), (10a) and (10b)

The distribution of the allomorphs of the

A. perfect moneme,

1. whose phonological form is with a long vowel occurs in the contexts of the monemes:
 - a. third person and masculine,
 - b. third person, feminine and singular,
 - c. third person, feminine and dual,
2. whose phonological form is with a short vowel occurs in all other contexts.

B. imperfect moneme,

1. whose phonological form contains a short vowel occurs in the context of the monemes feminine and plural.
2. whose phonological form contains a long vowel occurs in all other contexts.

It should be noted that there are four allomorphs for each conjugation class; we return to this below.

2.4 Allomorphs of the monemes of Voice

As we have given the phonological forms of the allomorphs of the monemes of Aspect, we give below the phonological forms of the allomorphs of the Voice monemes in the same way we presented the ones of Aspect.

(For both active and passive monemes, column (a) contains forms with long vowels and column (b) contains forms with short vowels.)

active		passive	
(a)	(b)	(a)	(b)
9. /-ā-/	9. /-i-/	7. /-ī-/	7. /-u-/
10. /-a-ī-/	10. /-a-i-/	8. /-u-ā-/	8. /-u-a-/
11. /-a-ū-/	11. /-a-u-/		9. /-i-/
12. /-a-ā-/	12. /-a-a-/		
13. /-u-ī-/	13. /-u-i-/		
	14. /-u-/		

As is done with the allomorphs of the Aspect monemes, here too we shall match the conjugation classes in (2.2) above to the classes of the allomorphs of the Voice monemes.

	Number of group of conjugation classes	Numbers of allomorphs of active moneme	Numbers of allomorphs of passive monemes
a.	(7)	(9a), (9b), (10a) and (10b)	(7a), (7b), (8a), and (8b)
b.	(8)	(9a), (14b), (11a) and (11b)	(7a), (9b), (8a) and (8b)
c.	(9)	(9a), (9b), (12a) and (12b)	(7a), (7b), (8a) and (8b)
d.	(10)	(9a), (9b), (13a) and (13b)	(7a), (7b), (8a) and (8b)

The distribution of the allomorphs of the Voice monemes is automatic in the sense that because their phonological forms are always amalgamated with those of the allomorphs of the Aspect monemes, then what applies to the allomorphs of the monemes perfect and imperfect, also applies to the allomorphs of the monemes active and passive, in terms of distribution.

V Statement of distribution of the allomorphs of the imperative moneme

1.0 Distribution of allomorphs of imperative moneme in complex pleremes of three or four consonants.

Below we shall carry out the same procedure we implemented with regard to the distribution of the allomorphs of the monemes of Aspect and Voice according to the groups of verb-bases of three or four consonants. That is, we shall give the phonological forms of the allomorphs of the imperative moneme and then match the groups of verb-bases (in sub-section (1.1) of section IV) to the said allomorphs and by that, we state the distribution of the said allomorphs as governed by the verb-base.

1.1 The phonological forms of the allomorphs of the imperative moneme

Allomorphs of the imperative moneme

1. /?u--u-/
2. /?i--i-/
3. /?i--a-/
4. /-a--i-/
5. /-ā-i-/

1.2 The matching of conjugation classes to the allomorphs of the imperative moneme.

	Number of conjugation class	Number of allomorph of the imperative moneme
a.	(1)	(1)
b.	(2)	(2)
c.	(3)	(3)
d.	(4)	(3)
e.	(5)	(4)
f.	(6)	(5)

2.0 Distribution of allomorphs of the imperative moneme in complex pleremes of verb-bases of two consonants

The distribution of allomorphs of the imperative moneme is conditioned, in this case, by the verb-base as well as by the realisations of the monemes of Gender and Number.

We have seen in sub-sections (1.0, 1.1 and 1.2) how the verb-base governs the distribution the allomorphs of the

imperative moneme. As for the conditioning of the distribution of the said allomorphs by the realisations of the Gender and Number monemes, we can take the examples "/bīḡī/" (sell!) No. B1) and "/bīḡna/" (sell!) (No. B2) on page 80 above where we find that the imperative moneme is realised as /-ī-/ (Long vowel) in the former owing to the fact that the feminine moneme is realised as /-ī/ which is also a long vowel whereas in the latter, the imperative moneme is realised as /-i-/ (short vowel) due to the realisation of the plural moneme with a short vowel, /-na/.

Also when both of the monemes of Gender and Number are realised with zero phonological forms as in "/bīḡ/" (sell!) (No. A.1 on page 80), the imperative moneme is also realised with a short vowel, /-i-/.

Thus we may conclude that the distribution of the allomorphs of the imperative moneme, in complex pleremes of verb-bases of two consonants, is a matter of the nature of the following vowel, if any. That is, we are dealing here with vowel harmony.

2.1 Stating the distribution of the allomorphs of the imperative moneme with the conjugation classes on page (85) above.

The allomorphs of the imperative moneme have the following phonological forms:

(Column (a) contains the forms with long vowels, while column (b) contains the forms with short vowels.)

	(a)		(b)
6.	/-ī-/	6.	/-i-/
7.	/-ū-/	7.	/-u-/
8.	/-ā-/	8.	/-a-/

To match the above allomorphs with the groups of verb-bases given on page (85), we shall have the following:

	Number of the conjugation class	Numbers of the allomorphs of the imperative moneme
a.	(7)	(6a) and (6b)
b.	(8)	(7a) and (7b)
c.	(9)	(8a) and (8b)
d.	(10)	(6a) and (6b)

Thus for each conjugation class we have two allomorphs of the Imperative moneme, the distribution of them being conditional by the nature of the following vowel if any. The long vowel allomorph (a) appears if a long vowel follows, while the short vowel (b) appears in all other contexts.

VI Realisations of the monemes of Person, Gender and Number

In this section we shall give some (9) of the realisations of the monemes of Person, Gender and Number in the contexts of the perfect, imperfect and imperative monemes.

We established, in chapter I of this Part, that the following entities are monemes:

1. third person, second person and first person,
2. masculine and feminine,
3. singular, dual and plural.

(9) We are only giving the realisations of the monemes of Person, Gender and Number when they occur in contexts of complex pleremes whose allomorphs have phonological forms that do not end in long vowels e.g. "/naṣara/" (he supported). The complex pleremes whose allomorphs have phonological forms that end with long vowels, as the /a/ in "/saṣā/" (he made effort), need to be separately investigated especially with regard to the realisations of the monemes of Person, Gender and Number.

Before commencing with the discussion of the realisations of the said monemes, we give below the phonological forms of the allomorphs of the monemes in question as they occur in complex pleremes with the verb-base "/-n-s-r-/" . The realisations of these monemes are established by commutations given in the discussion of the realisations of each moneme later on in this section.

Note that we need to distinguish in our discussion between:

/∅/ = zero phonological form.

∅ (without slanted lines) = zero which indicates that neither the masculine nor the feminine monemes occur in the context under discussion, e.g. the context of the monemes second person and dual, first person and plural, first person and singular whether in the perfect or in the imperfect. (See section of Gender in chapter I of this Part).

A. In the perfect.

1. "/naṣara/" (he supported)

<u>third person</u>	<u>masculine</u>	<u>singular</u>
/-a/	/∅/	/∅/

2. "/naṣarā/" (they two supported)

<u>third person</u>	<u>masculine</u>	<u>dual</u>
/∅/	/∅/	/-ā/

3. "/naṣarū/" (they supported)

<u>third person</u>	<u>masculine</u>	<u>plural</u>
/∅/	/-ū/	/∅/

4. "/naṣarat/" (she supported)

<u>third person</u>	<u>feminine</u>	<u>singular</u>
/-a-/	/-t/	/∅/

5. "/naṣaratā/" (they two supported)

<u>third person</u>	<u>feminine</u>	<u>dual</u>
/-a-/	/-t-/	/-ā/

6. "/naṣarna/" (they supported)

<u>third person</u>	<u>feminine</u>	<u>plural</u>
/ø/	/ø/	/-na/

7. "/naṣarta/" (you supported)

<u>second person</u>	<u>masculine</u>	<u>singular</u>
/-t-/	/-a/	/ø/

8. "/naṣartumā/" (you two supported)

<u>second person</u>		<u>dual</u>
/-tum-/	ø	/-ā/

9. "/naṣartum/" (you supported)

<u>second person</u>	<u>masculine</u>	<u>plural</u>
/-tum/	/ø/	/ø/

10. "/naṣarti/" (you supported)

<u>second person</u>	<u>feminine</u>	<u>singular</u>
/-t-/	/-i/	/ø/

11. "/naṣartunna/" (you supported)

<u>second person</u>	<u>feminine</u>	<u>plural</u>
/-tun-/	/ø/	/-na/

12. "/naṣartu/" (I supported)

<u>first person</u>		<u>singular</u>
/-tu/	ø	/ø/

13. "/naṣarnā/" (we supported)

<u>first person</u>		<u>plural</u>
/-nā/	ø	/-nā/ (10)

B. In the imperfect

1. "/iṣṣuru/" (he supports)

<u>third person</u>	<u>masculine</u>	<u>singular</u>
/i-/	/ø/	/-u/

(10) /-nā/ is an amalgamated phonological form of the allomorphs of the monemes first person and plural.

2. "/iaṅṣurāni/" (they two support)
third person masculine dual
 /i-/ /ø/ /āni/
3. "/iaṅṣurūna/" (they support)
third person masculine plural
 /i-/ /-ū-/ /-na/
4. "/taṅṣuru/" (she supports)
third person feminine singular
 /ø/ /t-/ /-u/
5. "/taṅṣurāni/" (they two support)
third person feminine dual
 /ø/ /t-/ /-āni/
6. "/iaṅṣurna/" (they support)
third person feminine plural
 /i-/ /ø/ /-na/
7. "/taṅṣuru/" (you support)
second person masculine singular
 /t-/ /ø/ /-u/
8. "/taṅṣurāni/" (you two support)
second person dual
 /t-/ ø /-āni/
9. "/taṅṣurūna/" (you support)
second person masculine plural
 /t-/ /-ū-/ /-na/
10. "/taṅṣurīna/" (you support)
second person feminine singular
 /t-/ /-īna/ /ø/
11. "/taṅṣurna/" (you support)
second person feminine plural
 /t-/ /ø/ /-na/

12. "/?anşuru/" (I support)

first personsingular

/?/

∅

/-u/

13. "/nansuru/" (we support)

first personplural

/n--u/

∅

/n--u/

C. In the imperative

1. "/?unşur/" (support!)

masculinesingular

/∅/

/∅/

2. "/?unşurā/" (you two support!)

∅

dual

/-ā/

3. "/?unşurū/" (support!)

masculineplural

/-ū/

/∅/

4. "/?unşurī/" (support!)

femininesingular

/-ī/

/∅/

5. "/?unşurna/" (support!)

feminineplural

/∅/

/-na/

In the above tables, we see that the allomorphs of the monemes of Person, Gender and Number have separate and amalgamated phonological forms. Below, we give a discussion of the realisations of the said monemes.

vb = verb-base, 3rd = third person, 2nd = second person, 1st = first person, m = masculine, f = feminine, s = singular, d = dual, p = plural, /∅/ = zero phonological form,

∅ (without slanted lines) = zero, i.e. no occurrence of Gender monemes.

1.0 Person1.1 Realisations of third person and second person monemes in the perfect1.1.1 In the contexts of the monemes, masculine and singular, feminine and singular.

If we take the examples "/naṣara/" (he supported), "/naṣarta/" (you supported, masculine), "/naṣarat/" (she supported) and "/naṣarti/" (you supported, feminine), we find that the third person moneme is realised as /-a/ in the contexts of the monemes masculine and singular while the second person moneme is realised as /-t-/ in the same contexts, as shown in the commutations below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>	
A.1.	vb	perfect	active	3rd	m	s = naṣara	
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a/	/∅/	/∅/	(he supported)
2.	vb	perfect	active	2nd	m	s = naṣarta	
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-t-/	/-a/	/∅/	(you supported)
<hr/>							
B.1.	vb	perfect	active	3rd	f	s = naṣarat	
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t/	/∅/	(she supported)
2.	vb	perfect	active	2nd	f	s = naṣarti	
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-t-/	/-i/	/∅/	(you supported)

We find that in the context of the masculine and singular monemes, the /-a/ of the third person moneme in "/naṣara/" in (A1) is opposed to the /-t-/ of the second person moneme in "/naṣarta/" in (A2). These two Person monemes have the same realisations in the context of feminine and singular monemes where the third person moneme is also realised as /-a/ in "/naṣarat/" in (B1) and the second person moneme is realised as /-t-/ in "/naṣarti/" in (B2).

Thus, in the perfect, the third person moneme has an /-a/ realisation and the second person moneme has a /-t-/ realisation in the contexts of the monemes masculine and singular, feminine and singular, respectively.

1.1.2 In the context of the monemes: masculine and dual and the realisation of the second person moneme in the context of the moneme dual. (11)

When in the perfect, the third person is realized with a zero phonological form / \emptyset / in the context of the masculine dual and the second person is realised as /-tum-/ in the context of the dual as we see in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	m	d = naṣarā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/ \emptyset /	/ \emptyset /	/-ā/ (they two supported)
b.	vb	perfect	active	2nd		d = naṣartumā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tum-/	\emptyset	/-ā/ (you two supported)

From the above we can say that the third person, in the context of the monemes masculine and dual, is realized with a zero phonological form / \emptyset / which is in opposition to the /-tum/, the realisation of the second person in the context of the dual moneme.

1.1.3 In the context of the monemes: feminine and dual

In the context of the monemes feminine and dual, the third person moneme also has the realisation of /-a/ as we see in the

(11) In the commutation we see that in (a), we have the context of the monemes masculine and dual whereas in (b) we have only the context of the dual moneme because the Gender monemes do not occur with the latter. Hence, we say masculine dual with regard to third person and only dual in respect to the second person.

commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	f	d = naṣartā
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t-/	/-ā/ (they two supported)
b.	vb	perfect	active	2nd	∅	d = naṣartumā
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tum-/		/-ā/ (you two supported)

We see that the realisation /-a/ of the third person moneme is different from the /-tum-/, the realisation of the second person moneme.

Hence, the third person moneme has an /-a/ realisation in the context of the monemes: feminine and dual.

1.1.4 In the contexts of the monemes masculine and plural, feminine and plural.

The third person moneme, whether in the context of the monemes masculine and plural or the context of the monemes feminine and plural, is realized as /∅/ whereas the second person moneme is realized as /-tum/ in the former context and as /-tun-/ in the latter context as we see in the following commutations:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
A.1.	vb	perfect	active	3rd	m	p = naṣarū
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/-ū/	/∅/ (they supported)
2.	vb	perfect	active	2nd	m	p = naṣartum
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tum/	/∅/	/∅/ (you supported)
B.1.	vb	perfect	active	3rd	f	p = naṣarna
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	/-na/ (they supported)
2.	vb	perfect	active	2nd	f	p = naṣartunna
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tun-/	/∅/	/-na/ (you supported)

where on one hand we have the / \emptyset / of the third person moneme in "/naṣarū/" in (A1) is opposed to the /-tum/ of the second person moneme in "/naṣartum/" in (A2) while on the other hand the / \emptyset / of third person moneme in "/naṣarna/" in (B1) is opposed to the /-tun-/ of the second person moneme in "/naṣartunna/" in (B2).

Thus, the third person moneme, in the perfect, is realised with a zero phonological form / \emptyset / in both of the contexts of the monemes: masculine and plural, feminine and plural, while the second person moneme is realised as /-tum/ in the first context and as /-tun-/ in the second context.

1.2 Realisations of third person and second person monemes in the imperfect

1.2.1 In the context of the monemes masculine and singular

The moneme third person is realised as /i-/ in the context of the monemes masculine and singular while the second person is realised as /t-/ in the same context as we see in the ensuing commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	s = iṅṣuru
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/i-/	/ \emptyset /	/-u/ (he supports)
b.	vb	imperfect	active	2nd	m	s = taṅṣuru
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/t-/	/ \emptyset /	/-u/ (you support)

where we find that the /i-/ of the third person moneme is opposed to the /t-/ of the second person moneme.

1.2.2 In the context of the monemes feminine and singular

In the contexts of the monemes, feminine and singular, the third person and the second person monemes are realised with a zero phonological form / \emptyset / and /t-/ respectively as we find in the following commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person.</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	f	s = tanṣuru
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/∅/	/t-/	/-u/ (she supports)
b.	vb	imperfect	active	2nd	f	s = tanṣurīna
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/t-/	/-īna/	/∅/ (you support)

in which we find that the /∅/ of third person is in opposition to the /t-/ of second person, in the context of the monemes feminine and singular.

1.2.3 In the context of the monemes masculine and dual and the context of the moneme dual (12)

The third person moneme is realised as /i-/ in the context of the monemes masculine and dual while the second person is realised as /t-/ in the dual, as in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	d = iaṣurāni
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-āni/ (13) (they two support)
b.	vb	imperfect	active	2nd	∅	d = tanṣurāni
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/t-/		/-āni/ (you two support)

where the /i-/ of the third person moneme, in the context of the monemes masculine and dual, is opposed to the /t-/ of the second person moneme in the context of the dual.

1.2.4 In the context of the monemes feminine and dual

In the context of the monemes feminine and dual, the third person moneme is realized with a zero phonological form /∅/ as we can see in the ensuing commutation:

(12) See page (94) of this chapter.

(13) There is a possibility that /-āni/ could be analysed as /-ā/, the phonological form of the allomorph of the dual moneme and some suffix /-ni/. However, any discussion of this would be dependent on widening the data to include the so-called "subjunctive" and "jussive" moods and this is beyond the scope of the present study.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	f	d = tansurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/∅/	/t-/	/-āni/ (they two support)
b.	vb	imperfect	active	2nd	∅	d = tansurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/		/-āni/ (you two support)

where in (a) the /∅/ of the third person moneme is opposed to the /t-/ of the second person moneme.

1.2.5 In the contexts of the monemes masculine and plural, feminine and plural

As for the realisation of the third person and the second person moneme in the contexts of the monemes masculine and plural, feminine and plural, we find that the third person moneme is realised as /i-/ in both contexts while the second person moneme has the realisation of /t-/ in the same two contexts as we see in the commutations below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.1.	vb	imperfect	active	3rd	m	p = iansurūna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/-ū-/	/-na/ (they support)
2.	vb	imperfect	active	2nd	m	p = tansurūna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/-ū-/	/-na/ (you support)
<hr/>						
b.1.	vb	imperfect	active	3rd	f	p = iansurna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-na/ (they support)
2.	vb	imperfect	active	2nd	f	p = tansurna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-na/ (you support)

We see above that in both contexts: of the monemes masculine and plural, feminine and plural, the third person moneme is realized

as /i-/ which is in opposition to the /t-/ of the second person in the same contexts.

1.3 Realisations of the first-person moneme in the perfect

1.3.1 In the contexts of the singular moneme and the plural moneme.

The first person moneme is realised as /-tu/ in the context of the singular moneme and as /-nā/ in the context of the plural moneme as is shown in the commutations below.

We have recognized /-tu/ as being the realisation of the first person moneme because the singular moneme has the realisation of zero phonological form which *is* analogous to the realisations of the said moneme in the contexts of the monemes: third person or second person (masculine or feminine) as we shall see in the discussion of the realisations of the moneme in question.

Also the realisation /-tu/ of the first person moneme in the context of the singular moneme can be opposed to the realisation /-t-/ of the second person moneme in the context of the monemes masculine and singular as in the commutation below (No. A).

The realisation /-nā/ of the first person moneme in the context of the plural moneme can also be opposed to the realisation /-tum/ of the second person moneme in the context of the masculine and plural monemes, as shown in the commutation below (No. B).

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
A.1.	vb	perfect	active	1st	∅	s = naṣartu
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tu/		/∅/ (I supported)
2.	vb	perfect	active	2nd	m	s = naṣarta
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-t-/	/-a/	/∅/ (you supported)

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
B.1.	vb	perfect	active	1st		p = naṣarnā
	/-n-s-r-/	/-a-a-a-/	/-a-a-a-/	/-nā/	∅	/-nā/ (we supported)
2.	vb	perfect	active	2nd	m	p = naṣartum
	/-n-s-r-/	/-a-a-a-/	/-a-a-a-/	/-tum/	/∅/	/∅/ (you supported)

/-nā/ in (B1) above is actually an amalgamated phonological form of the allomorphs of the two monemes: first person and plural, owing to the fact that the realisation /-nā/ of the first person moneme coincides with the realisation /-nā/ of the plural moneme. In other words, /-nā/ is representing the two monemes in question in "/naṣarnā/" and that is the reason for regarding /-nā/ as an amalgamated realisation of both monemes.

1.4 Realisations of the first person moneme in the imperfect.

1.4.1 In the contexts of the singular moneme and the plural moneme.

In the imperfect, the first person moneme has the realisation of /?/ in the context of the singular moneme but in the context of the plural moneme, the first person moneme is realized as /n--u/ as we see in the following commutations:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
A.1.	vb	imperfect	active	1st		s = ?anṣuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/?-/	∅	/-u/ (I support)
2.	vb	imperfect	active	2nd	m	s = tanṣuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-u/ (you support)
B.1.	vb	imperfect	active	1st		p = nanṣuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/n--u/	∅	/n--u/ (we support)
2.	vb	imperfect	active	2nd	m	p = tanṣurūna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/-ū-/	/-na/ (You support)

The /ʔ/ of first person moneme in (A) is different from the /t-/ of the second person moneme while in (B) the /n--u/ of first person moneme is different from the /t-/ of the second person moneme.

Now /n--u/ is regarded as an amalgamated phonological form of the allomorphs of the first person moneme and the plural moneme because in "/nansuru/" the realisation /n--u/ of the former moneme coincides with the realisation /n--u/ of the latter moneme. Putting it another way, /n--u/ is representing the two monemes, first person and plural, in "/nansuru/".

To summarise, we can say that,

in the perfect

(A) the third person moneme is realised:

1. as /-a/ in the contexts of the monemes:
 - a. masculine and singular,
 - b. feminine and singular,
 - c. feminine and dual.
2. with a zero phonological form /∅/ in the contexts of the monemes:
 - a. masculine and dual.
 - b. masculine and plural.
 - c. feminine and plural.

(B) the second person moneme is realised as:

1. /-t-/ in the contexts of the monemes:
 - a. masculine and singular,
 - b. feminine and singular.
2. /-tum/ in the contexts of the monemes:
 - a. dual
 - b. masculine and plural.
3. /-tun-/ in the contexts of the monemes feminine and plural.

(C) the first person moneme is realised as:

1. /-tu/ in the context of the singular moneme.
2. /-nā/ in the context of the plural moneme.

in the imperfect

(A) the third person moneme is realised:

1. as /i-/ in the contexts of the monemes:
 - a. masculine and singular,
 - b. masculine and dual,
 - c. masculine and plural
 - d. feminine and plural.
2. with zero phonological form /∅/ in the contexts of the monemes:
 - a. feminine and singular,
 - b. feminine and dual.

(B) the second person moneme is realised as /t-/ in the contexts of all the monemes of Gender and Number

(C) the first person moneme is realised as:

1. /ʔ/ in the context of the singular moneme.
2. /n--u/ in the context of the plural moneme.

At the end of this section comes a full abbreviation of the realisations above.

2.0 Gender2.1 In the perfect2.1.1 In the context of the monemes, second person and singular

The masculine moneme is realised as /-a/ in the context of the second person and singular monemes whereas the feminine moneme is realized as /-i/ in the context in question, as we see in the ensuing commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	2nd	m	s = naṣarta
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-t-/	/-a/	/∅/ (you supported)
b.	vb	perfect	active	2nd	f	s = naṣarti
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-t-/	/-i/	/∅/ (you supported)

Where the /-a/ of the masculine moneme in "/naṣarta/" in (a) is different from the /-i/ of the feminine moneme in "/naṣarti/" in (b).

2.1.2 In the context of the monemes third person and singular.

In the context of the monemes third person and singular, the masculine moneme is realised with a zero phonological form /∅/ but the feminine moneme, in the same context, has the realisation of

/-t/ as shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	m	s = naṣara
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-a-/	/∅/	/∅/ (he supported)
b.	vb	perfect	active	3rd	f	s = naṣarat
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t/	/∅/ (she supported)

In the commutation we can see that the /∅/ of the masculine moneme is opposed to the /-t/ of the feminine moneme.

2.1.4 In the context of the monemes third person and dual.

The masculine and the feminine monemes are realised with a zero phonological form /∅/ and /-t-/ respectively in the context of the third person and the dual monemes, as in the following commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	m	d = naṣarā
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	/-ā/ (they two supported)
b.	vb	perfect	active	3rd	f	d = naṣaratā
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t-/	/-ā/ (they two supported)

in which we find that the /∅/ of the masculine moneme is opposed to the /-t-/ of the feminine moneme.

2.1.5 In the context of the second person and plural monemes.

When the masculine and the feminine monemes occur in the context of the monemes second person and dual, they are both realised with a zero phonological form. The distinction between "/naṣartum/" (you supported, masculine) and "/naṣartunna/" (you supported, feminine) is that in the former the second person moneme is realised as /-tum/ and the plural moneme is realised with a zero phonological form whereas in the latter the first

moneme is realised as /-tan-/ and the second moneme is realised as /-na/.

2.1.6 In the context of the monemes third person and plural

The masculine and the feminine monemes are realised as /-ū/ and with a zero phonological form respectively in the context of the monemes, third person and plural, as shown in the ensuing commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	m	p = naṣarū
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/-ū/	/∅/ (they supported)
b.	vb	perfect	active	3rd	f	p = naṣarna
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	/-na/ (they supported)

where we find that the /-ū/ of the masculine moneme is opposed to the /∅/ of the feminine moneme in the same context.

2.2 In the imperfect

2.2.1 In the context of the monemes second person and singular

The masculine and the feminine monemes have the realisations of /∅/ and /-īna/ respectively in the context of the monemes second person and singular, as we see in the following commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	2nd	m	s = tanṣuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-u/ (you support)
b.	vb	imperfect	active	2nd	f	s = tanṣurīna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/-īna/	/∅/ (you support)

where the /∅/ of the masculine moneme is different from the /-īna/ ⁽¹⁴⁾ of the feminine moneme.

(14) Note that /-īna/ contains /-ī-/ which is the phonological form of the allomorph of the feminine moneme found elsewhere and a suffix /-na/. This situation appears parallel to that noted briefly in footnote (4) on page .

2.2.2 In the context of the monemes third person and singular

In the context of the monemes third person and singular, the masculine moneme has a realisation with a zero phonological form / \emptyset / while the feminine moneme is realised as /t-/ as in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	s = i \dot{a} nsuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/ \emptyset /	/-u/ (he supports)
b.	vb	imperfect	active	3rd	f	s = tan \dot{s} uru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/ \emptyset /	/t-/	/-u/ (she supports)

where we find that the / \emptyset / of the masculine moneme is opposed to the /t-/ of the feminine moneme in the same context.

2.2.4 In the context of the third person and dual monemes

The Gender monemes, masculine and feminine, are realised with a zero phonological form / \emptyset / in respect to the former and with a /t-/ in respect to the latter in the context of the monemes third person and dual, as shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	d = i \dot{a} nsur \bar{a} ni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/ \emptyset /	/- \bar{a} ni/ (they two support)
b.	vb	imperfect	active	3rd	f	d = tan \dot{s} ur \bar{a} ni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/ \emptyset /	/t-/	/- \bar{a} ni/ (they two support)

We can see that the / \emptyset / of the masculine moneme is opposed to the /t-/ of the feminine moneme in the same context.

2.2.5 In the context of the second person and plural monemes

The masculine and feminine monemes are realised as /- \bar{u} / with regard to the first moneme and with a zero phonological form / \emptyset / in respect to the second moneme in the context of the monemes second person and plural, as is given in the ensuing commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	2nd	m	p = taṅsurūna
	/-n-s-r-/	/-a--u-/	/a--u-/	/t-/	/-ū-/	/-na/ (you support)
b.	vb	imperfect	active	2nd	f	p = taṅsurna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-na/ (you support)

where we can see that the /-ū-/ of the masculine moneme is opposed to the /∅/ of the feminine moneme in the context of the monemes second person and plural.

2.2.6 In the context of the monemes third person and plural.

In this case, the masculine moneme and the feminine moneme have the same realisations as the ones in the context of the monemes second person and plural as we can find in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	p = iaṅsurūna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/-ū-/	/-na/ (they support)
b.	vb	imperfect	active	3rd	f	p = iaṅsurna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-na/ (they support)

where again we have the /-ū-/ of the masculine moneme opposed to the /∅/ of the feminine moneme in the context of the third person and singular monemes, like the ones in the context of the second person and plural monemes.

2.3 In the imperative

2.3.1 In the context of the moneme singular

The masculine and the feminine monemes are realised with a zero phonological form /∅/ in respect to the former and an /-ī/ with regard to the latter in the context of the moneme singular, as we see in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb		imperative		m	s = ?un _u sur
	/-n-s-r-/		/?u--u-/		/∅/	/∅/ (support!)
b.	vb		imperative		f	s = ?un _u surī
	/-n-s-r-/		/?u--u-/		/-ī/	/∅/ (support!)

We can see that the /∅/ of the masculine moneme is opposed to the /ī/ of the feminine moneme in the context of the moneme singular .

2.3.2 In the context of the plural moneme

In the context of the plural moneme, the masculine moneme is realized as /-ū/ while the feminine moneme is realized with a zero phonological form /∅/ as shown in the following commutation:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb		imperative		m	p = ?un _u surū
	/-n-s-r-/		/?u--u-/		/-ū/	/∅/ (support!)
b.	vb		imperative		f	p = ?un _u surna
	/-n-s-r-/		/?u--u-/		/∅/	/-na/ (support!)

where the /-ū/ of the masculine moneme is opposed to the /∅/ of the feminine moneme in the context of the plural moneme.

Summarizing our discussion, we can say that the masculine moneme is realised:

(A) in the perfect

- with a zero phonological form /∅/ in the contexts of the monemes:
 - third person and singular
 - third person and dual
 - second person and plural
- as /-a/ in the context of the monemes second person and singular.
- as /-ū/ in the context of the monemes third person and plural.

(B) in the imperfect

- with a zero phonological form /∅/ in the contexts of the monemes:
 - third person and singular,
 - second person and singular,
 - third person and dual.
- as /-ū-/ in the contexts of the monemes:
 - third person and plural.
 - second person and plural.

(C) in the imperative

1. with a zero phonological form / \emptyset / in the context of the moneme singular.
2. as /- \bar{u} / in the context of the moneme plural.

The feminine has the following realisations:

(A) in the perfect

1. /-t/ in the context of the monemes:
 - a. third person and singular.
 - b. third person and dual.
2. /-i/ in the context of the monemes second person and singular.
3. zero phonological form / \emptyset / in the contexts of the monemes:
 - a. third person and plural.
 - b. second person and plural.

(B) in the imperfect

1. /t-/ in the context of the monemes:
 - a. third person and singular.
 - b. third person and dual.
2. /- \bar{ina} / in the context of the monemes second person and singular.
3. zero phonological form / \emptyset / in the contexts of the monemes:
 - a. third person and plural.
 - b. second person and plural.

(C) in the imperative

1. /- \bar{i} / in the context of the moneme singular.
2. zero phonological form in the context of the moneme plural.

Full abbreviations of the above realisations are given in the end of this section.

3.0 Number3.1.0 in the perfect3.1.1.0 Singular and dual monemes3.1.1.1 in the context of the monemes third person and feminine

If we take the examples "/na \bar{s} arat/" (she supported) and "/na \bar{s} arat \bar{a} /" (they two supported), we find that the singular

moneme is realised with a zero phonological form / \emptyset / in the former and the dual moneme is realised as /-ā/ in the latter, as shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	f	s = naṣarat
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t/	/ \emptyset / (she supported)
b.	vb	perfect	active	3rd	f	d = naṣaratā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t-/	/-ā/ (they two supported)

The / \emptyset / of the singular moneme is opposed to the /-ā/ of the dual moneme in the context of the monemes third person and feminine.

3.1.1.2 In the context of the monemes third person and masculine

In "/naṣara/" (he supported) and "/naṣarā/" (they two supported), the singular moneme is also realised with a zero phonological form / \emptyset / and the dual moneme is realised as /-ā/ as shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	m	s = naṣara
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a/	/ \emptyset /	/ \emptyset / (he supported)
b.	vb	perfect	active	3rd	m	d = naṣarā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/ \emptyset /	/ \emptyset /	/ā/ (they two supported)

where we can see that the / \emptyset / of the singular moneme is in opposition to the /-ā/ of the dual moneme.

3.1.1.3 In the context of the monemes second person and feminine and context of the second person moneme in respect to the latter(15)

Taking the examples "/naṣarti/" (you supported) and "/naṣartumā/" (you two supported), we also find that the singular moneme is realised with a zero phonological form / \emptyset / and the dual

(15) No Gender monemes occur with the dual.

has the realisation of /-ā/ as shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	2nd	f	s = naṣarti
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-t-/	/-i/	/∅/ (you supported)
b.	vb	perfect	active	2nd	∅	d = naṣartumā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tum-/		/-ā/ (you two supported)

in which the /∅/ of the singular moneme is opposed to the /-ā/ of the dual moneme.

3.1.1.4 In the context of the monemes second person and masculine

In the context of the monemes second person and masculine, the singular moneme is realised with a zero phonological form /∅/ as is shown in the commutation below where the /∅/ of the singular moneme is opposed to the /-ā/ of the dual moneme:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	2nd	m	s = naṣarta
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-t-/	/-a/	/∅/ (you supported)
b.	vb	perfect	active	2nd	∅	d = naṣartumā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tum-/		/-ā/ (you two supported)

3.1.2.0 Singular and plural monemes

3.1.2.1 In the context of the first person moneme

With regard to the realisations of the singular and the plural monemes in the context of the first person moneme, the former moneme is realised with a zero phonological form /∅/ and the latter moneme is realised as /-nā/ in the context in question as we see in the commutation below wherein the /∅/ of the singular moneme is in opposition to the /-nā/ of the plural moneme:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	1st	∅	s = naṣartu
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tu/		/∅/ (I supported)
b.	vb	perfect	active	1st	∅	p = naṣarnā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-nā/		/-nā/ (we supported)

The realisation of zero phonological form / \emptyset / of the singular moneme in the context of the first person is analagous to the realisations of the moneme in question in the contexts of the monemes third person and masculine, third person and feminine, second person and masculine, second person and feminine. That is, the singular moneme has the realisation of zero phonological form / \emptyset / in all contexts having the perfect moneme.

In this case, the realisation /-nā/ of the first person moneme coincides with the /-nā/ of the plural moneme. That is, /-nā/ is actually regarded as an amalgamated phonological form of the allomorphs of the two monemes since it is representing the said monemes in "/naṣarnā/".

3.1.3.0 Realisations of the plural moneme in rest of the contexts

3.1.3.1 In the context of the monemes second person and masculine.

The plural moneme is realised with a zero phonological form / \emptyset / in the context of the monemes second person and masculine as we see in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	2nd	m	p = naṣartum
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tum/	/ \emptyset /	/ \emptyset / (you supported)
b.	vb	perfect	active	2nd		d = naṣartumā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-tum-/	∅ (16)	/-ā/ (you two supported)

where we find that the plural moneme has a realization with a zero phonological form / \emptyset / opposed to the /-ā/ the realisation of the dual.

3.1.3.2 In the context of the monemes second person and feminine.

If we take the example "/naṣartunna/" (you supported), we find that the plural moneme is realised as /-na/ in the context of the

(16) No monemes of Gender occur here with the second person.

monemes second person and feminine as we can see in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	2nd	f	p = naṣartunna
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tun-/	/∅/	/-na/ (you supported)
b.	vb	perfect	active	2nd	∅	d = naṣartumā
	/-n-s-r-/	/-a-a-/	/-a-a-/	/-tum-/		/-ā/ (you two supported)

wherein we can see that the /-na/ of the plural moneme is opposed to the /-ā/ of the dual moneme.

3.1.3.3 In the context of the monemes third person and masculine

Taking the example "/naṣarū/" (they supported, masculine) and try to commute the plural moneme again with a dual moneme in the same context, we shall find the following:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	m	p = naṣarū
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/-ū/	/∅/ (they supported)
b.	vb	perfect	active	3rd	m	d = naṣarā
	/-n-s-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	/-ā/ (they two supported)

In this case, the /∅/ of the plural moneme is opposed to the /-ā/ of the dual moneme. Thus the plural moneme has a realisation of zero phonological form /∅/ in the context of the monemes third person and masculine.

3.1.3.4 In the context of the monemes third person and feminine

On the other hand, if we take the example "/naṣarna/" (they supported, feminine) and try to commute the plural moneme with a dual moneme again in the context of the monemes third person and feminine, we find:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	perfect	active	3rd	f	p = naṣarna
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/∅/	/∅/	/-na/ (they supported)
b.	vb	perfect	active	3rd	f	d = naṣaratā
	/-n-ṣ-r-/	/-a-a-/	/-a-a-/	/-a-/	/-t-/	/-ā/ (they two supported)

that the plural moneme is realised as /-na/ which is in opposition to the /-ā/ the realisation of the dual moneme in the same context. Hence, the plural moneme has the realisation of /-na/ in the context of the third person and feminine monemes.

3.2.0 In the imperfect

3.2.1.0 Realisations of the singular and the dual monemes

3.2.1.1 In the context of the monemes third person and feminine

The realisations of the singular and the dual monemes, in the context of the third person and feminine monemes, are /-u/ and /-āni/ respectively as shown in the commutation below in which the /-u/ of the singular is opposed to the /-āni/ of the dual in the context in question:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	f	s = taṣuru
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/∅/	/t-/	/-u/ (she supports)
b.	vb	imperfect	active	3rd	f	d = taṣurāni
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/∅/	/t-/	/-āni/ ⁽¹⁷⁾ (they two support)

3.2.1.2 In the context of the monemes third person and masculine

When in the imperfect, the singular and the dual monemes are realised as /-u/ and /-āni/ respectively in the context of the monemes third person and masculine as given in the following commutation in which is shown the opposition between the /-u/ of the singular moneme and the /-āni/ of the dual moneme in the context concerned:

(17) See footnote No. (13) on page 100 of this chapter.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	s = ianşuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-u/ (he supports)
b.	vb	imperfect	active	3rd	m	d = ianşurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-āni/ (they two support)

3.2.1.3 In the context of second person and masculine monemes (18)

Taking the examples "/tanşuru/" (you support) and "/tanşurāni/" (you two support), we find that the singular moneme in the former is realised as /-u/ while the dual moneme is realised as /-āni/ in the latter, as is shown in the commutation below wherein the /-u/ of the singular moneme is opposed to the /-āni/ of the dual moneme:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	2nd	m	s = tanşuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-u/ (you support)
b.	vb	imperfect	active	2nd	∅	d = tanşurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/		/-āni/ (you two support)

3.2.1.4 Realisation of the singular moneme in the context of the second person and feminine monemes.

In the context of the second person and feminine monemes, the singular moneme is also realised with a zero phonological form as is shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	2nd	f	s = tanşurīna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/-īna ⁽¹⁹⁾ /	/∅/ (you support)
b.	vb	imperfect	active	2nd	∅	d = tanşurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/		/-āni/ (you two support)

(18) Due to lack of Gender in the context of the monemes second person and dual

(19) See footnote No. (14) on page (107) of this chapter.

wherein the / \emptyset / of the singular moneme is opposed to the /-āni/ of the dual moneme.

3.2.2.0 Realisations of the singular moneme and the plural moneme in the context of the first person moneme

The singular and the plural monemes are realised as /-u/ and /n--u/ respectively in the context of the first person moneme⁽²⁰⁾. In the commutation below, the /-u/ of the singular moneme is opposed to the /n--u/ of the plural moneme in the context in question:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	1st		s = ?ansuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/?/	\emptyset	/-u/ (I support)
b.	vb	imperfect	active	1st		p = nansuru
	/-n-s-r-/	/-a--u-/	/-a--u-/	/n--u/	\emptyset	/n--u/ (we support)

/n--u/ is an amalgamated phonological form which is representing the allomorphs of the monemes first person and plural in "/nansuru/". The realisation /n--u/ of the first person moneme coincides with /n--u/ the realisation of the plural moneme in the complex plereme mentioned.

3.2.3.0 Realizations of the plural moneme in other contexts

3.2.3.1 In the context of the monemes second person and masculine

If we take the example "/tansurūna/" (you support, masculine) which contains the plural moneme, we find that the said moneme is realised as /-na/ as is shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	2nd	m	p = tansurūna
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	/-ū-/	/-na/ (you support)
b.	vb	imperfect	active	2nd		d = tansurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/t-/	\emptyset	/-āni/ (you two support)

(20) No Gender monemes occur in the context of the first person moneme

wherein we see that the /-na/ of the plural moneme is opposed to the /-āni/ of the dual moneme.

3.2.3.2 In the context of the monemes second person and feminine

The opposition between the /-na/ of the plural moneme and the /-āni/ of the dual moneme (above in section 3.2.3.1) occurs also in the context of the second person and feminine monemes with regard to the former moneme and the context of the second person with regard to the dual⁽²¹⁾ as is shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	2nd	f	p = tansurna
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/t-/	/∅/	/-na/ (you support)
b.	vb	imperfect	active	2nd	∅	d = tansurāni
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/t-/	∅	/-āni/ (you two support)

3.2.3.3 In the context of the monemes third person and masculine

If we take the example "/iṅsurūna/" (they support, masculine), and try to commute the plural moneme with a dual moneme in the same context, we find:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	m	p = iṅsurūna
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/i-/	/-ū-/	/-na/ (they support)
b.	vb	imperfect	active	3rd	m	d = iṅsurāni
	/-n-ṣ-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-āni/ (they two support)

that the plural moneme has the realisation /-na/ which is in opposition to the realisation /-āni/ of the dual moneme.

3.2.3.4 In the context of the monemes third person and feminine.

In "/iṅsurna/" (they support, feminine) we find that the plural moneme is also realised as /-na/ in the context of the

(21) Gender monemes do not combine with the monemes second person and dual.

monemes third person and feminine as is shown in the commutation below:

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb	imperfect	active	3rd	f	p = ianṣurna
	/ən-s-r-/	/-a--u-/	/-a--u-/	/i-/	/∅/	/-na/ (they support)
b.	vb	imperfect	active	3rd	f	d = tansurāni
	/-n-s-r-/	/-a--u-/	/-a--u-/	/∅/	/t-/	/-āni/ (they two support)

We can see that the /-na/ of the plural moneme is in opposition to the /-āni/ of the dual moneme in the same context.

3.3.0 In the imperative

3.3.1.0 Realisation of the singular moneme

3.3.1.1 In the context of the masculine moneme and the realisation of the dual in the context of the imperative moneme only (22)

In the context of the masculine moneme the singular moneme is realised with a zero phonological form while the dual is realised as /-ā/ as is shown in the commutation below.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb		imperative		m	s = ?unṣur
	/-n-s-r-/		/?u--u-/		/∅/	/∅/ (support!)
b.	vb		imperative		∅	d = ?unṣurā
	/-n-s-r-/		/?u--u-/			/-ā/ (you two support)

where we find the /∅/ of the singular moneme is opposed to the /-ā/ of the dual moneme.

3.3.1.2 In the context of the feminine moneme

In the context of the feminine moneme, the singular moneme is also realised with a zero phonological form /∅/ but the plural moneme is realised as /-na/ in the same context as we see in the commutation below wherein the /∅/ of the singular moneme is opposed to the /-na/ of the plural moneme:

(22) No Gender monemes occur with the dual in the context of the imperative moneme.

	<u>Verb-base</u>	<u>Aspect</u>	<u>Voice</u>	<u>Person</u>	<u>Gender</u>	<u>Number</u>
a.	vb		imperative		f	s = ?unṣurī
	/-n-s-r-/		/?u--u-/		/-ī/	/∅/ (support!)
b.	vb		imperative		f	p = ?unṣurna
	/-n-s-r-/		/?u--u-/		/∅/	/-na/ (support!)

3.4 Summation

The monemes of Number have the following realisations of:

3.4.0 Singular moneme

(A) in the perfect

/∅/ zero phonological form in the contexts of all the monemes of Person and Gender.

(B) in the imperfect

1. /∅/ zero phonological form in the context of the monemes second person and feminine.
2. /-u/ in all other contexts containing the monemes of Person and Gender.

(C) in the imperative

/∅/ zero phonological form in all contexts of the monemes of Gender.

3.4.1 Dual moneme

(A) in the perfect

/-ā/ in all contexts in which it occurs.

(B) in the imperfect

/-āni/ in all contexts of Person and Gender.

(C) in the imperative

/-ā/ in the context of the imperative moneme.

3.4.2 Plural moneme

(A) in the perfect

1. /-nā/ in the context of the moneme first person.
2. /∅/ zero phonological form in the contexts of the monemes:
 - a. second person and masculine
 - b. third person and masculine

3. /-na/ in the contexts of the monemes:
 - a. second person and feminine
 - b. third person and feminine.

(B) in the imperfect

/-na/ in the contexts of all the monemes of Person and Gender except in the context of first person moneme where it is realised as /n--u/.

(C) in the imperative

1. / \emptyset / zero phonological form in the context of the masculine moneme.
2. /-na/ in the context of the feminine moneme.

4.0 Distribution of the allomorphs of the monemes of Person, Gender and Number.

In what follows, we shall state the distribution of the allomorphs of the monemes of Person, Gender and Number in respect to complex pleremes with verb-bases discussed.

4.1 Person

4.1.1 third person moneme

The third person moneme is realised:

- a. as /-a/ when the following monemes occur, i.e. either with:
 1. perfect, singular, or
 2. perfect, feminine and dual.
- b. with a zero phonological form / \emptyset / when the following monemes occur, either:
 1. perfect, masculine and dual,
 2. perfect and plural, *or*
 3. imperfect and feminine,
- c. as /i-/ when the monemes below occur, either:
 1. imperfect and masculine, *or*
 2. imperfect, feminine and plural.

4.1.2 Second person moneme

The second person moneme is realised:

- a. as /t/ when the following monemes occur; either with:
 1. singular,
 2. imperfect and dual,
 3. plural,
 4. imperfect, feminine and plural,
- b. as /-tun-/ when perfect, feminine and plural monemes occur.
- c. as /tum/ elsewhere, i.e. perfect dual and perfect masculine plural.

4.1.3 first person moneme

The monemes of Gender do not play a role in determining the occurrence of the allomorphs of the first person moneme since they do not occur. Thus the occurrence of the realisations of the first person moneme are determined by the following monemes:

- a. as /tu/ when monemes perfect and singular occur,
- b. as /-nā/ when monemes perfect and plural occur,
- c. as /?/ when monemes imperfect and singular occur, and
- d. as /n--u/ when monemes imperfect and plural occur.

4.2 Gender4.2.1 The masculine moneme

1. as /-a/ in the context of the monemes: perfect, second person and singular.
2. as /-ū/ in the context of the moneme plural, except in context given in No. (3) below.
3. with a zero phonological form /∅/ in the context of the monemes perfect, second person and plural and all other contexts.

4.2.2 The feminine moneme

1. zero phonological form in the context of the plural moneme.
2. /-i/ in the context of the monemes perfect, second person and singular.
3. /-īna/ in the context of the monemes imperfect, second person and singular.
4. /-ī/ in the context of the monemes imperative and singular.
5. /-t/ elsewhere.

Number(A) Singular

1. Zero phonological form / \emptyset / in the contexts of the monemes perfect, imperative and imperfect, second person and feminine.
2. /-u/ elsewhere.

(B) Dual

1. /-ā/ in the contexts of the perfect and imperative monemes.
2. /-āni/ in the context of the moneme imperfect.

(C) Plural

1. /-nā/ in the context of the perfect and first person monemes.
2. /n--u/ in the context of the imperfect and first person monemes.
3. zero phonological form / \emptyset / in the contexts of the monemes:
 - a. perfect and masculine
 - b. imperative and masculine
4. /-na/ elsewhere.

VII Distribution of monemes within the verbal complex plereme(A) Distribution of monemes of Aspect and Voice according to verb-base

Verb-bases given on pages 61 and 62 are either of two, three or more consonants, e.g. "/-b-ſ-/", "/-n-s-r-/ and "/-d-ḥr-ẏ-/ " respectively. Thus, we can set up two canonical forms for

the verb-base which are as follows:

- a. $C_1 - C_2$ for the verb-base of two consonants, e.g. "/-b-**q**-/".
- b. $C_1 - C_2 - C_3$ for the verb-bases of three or more consonants where C_2 may correspond to one or two consonants, i.e. "/-n-**q**-r-/" vs. "/-d-**hr**-**z**-/".

Now the places between and before the Cs of the verb-base are filled by the vowels which constitute the amalgamated phonological forms of the allomorphs of the monemes of the Aspect and Voice paradigms. The places occupied by the vowels in question can be labeled thus:

$$(Co) \overset{(23)}{\underline{1}} C_1 \overset{2}{\underline{2}} C_2$$

and $(Co) \underline{1} C_1 \overset{2}{\underline{2}} C_2 \overset{3}{\underline{3}} C_3$

We can now label the vowels of the amalgamated phonological forms of the relevant allomorphs of the monemes of Aspect and Voice, that fill the said places, thus:

When the perfect moneme occurs with either the active or the passive moneme, the vowels are distributed in places 2 and 3, with a three or more consonant verb-base or in place 2 with a two consonant verb-base. Hence, the canonical forms for the perfect are /- $V_2 - V_3$ -/ and /- V_2 -/ respectively.

With the imperfect and imperative monemes, places 1 and 3 are filled by the relevant vowels of the phonological forms of the said monemes in respect to the verb-bases of three or more consonants. As for the verb-bases of two consonants, places 1 and 2 are filled by the relevant vowels of the imperfect moneme and place 2 only by the relevant vowel of the imperative moneme. Thus, for the imperfect we have the canonical forms /- $V_1 - V_3$ /

(23) "optional consonant" which we shall discuss later on.

and $/-V_1 - V_2 -/$ while for the imperative we have the canonical forms $/^?V_1 - V_3 -/$ or $/-V_1 - V_3 -/$ and $/-V_2 -/$.

Now, we can match the vowel subscripts with the place numbers as follows:

a. with the perfect moneme

	<u>Canonical form of verb-base</u>	<u>Canonical form of perfect</u>	
1.	$C_1 - C_2 - C_3$	$/-V_2 - V_3 -/$	= našara
2.	$C_1 - C_2$	$/-V_2 -/$	= baša, or biša

b. with the imperfect moneme

	<u>Canonical form of verb-base</u>	<u>Canonical form of imperfect</u>	
1.	$C_1 - C_2 - C_3$	$/-V_1 - V_3 -/$	= iašuru
2.	$C_1 - C_2$	$/-V_1 - V_2 -/$	= iabišu, or iabiša

c. with the imperative moneme

	<u>Canonical form of verb-base</u>	<u>Canonical form of imperative</u>	
1.	$C_1 - C_2 - C_3$	$/^?V_1 - V_3 -/$ or $/-V_1 - V_3 -/$	= šunšur = dašriš
2.	$C_1 - C_2$	$/-V_2 -/$	= bišu, or biša

(B) Distribution of monemes of Person, Gender and Number according to verb-base and monemes of Aspect and Voice

The best example in which the monemes of Person, Gender and Number have a non-zero realisation is $/našaratā/$ which contains the monemes: third person realised as $/-a/$, feminine realised as $/-t-/$ and the dual realised as $/-ā/$ and the three monemes are occurring in the order of Person, Gender and Number. This is the constant order of their realisations with respect to each other. However, with respect to the verb-base, the order of

realisation is not constant.

When the perfect moneme occurs, the Person, Gender and Number monemes occur after the verb-base and in the order shown above. On the other hand, Arabic does not allow an initial vowel and with the imperfect moneme and imperative moneme in certain circumstances ⁽²⁴⁾ we have an initial vowel, i.e. place 1 is filled by a vowel. Thus we need an initial consonant, (Co). The situation is saved by taking the phonological form of the allomorph of a Person or a Gender moneme and placing it in initial place, i.e. (Co) above, such that any vocalic phoneme, thus moved, has a non-vocalic, i.e. glide, realisation.

Thus the distribution can be accounted for in the following way:

- a. Person, Gender and Number monemes always occur in that order relative to each other
- b. When V₁ is filled by a vowel, then the left-most member of Person, Gender and Number which has a non-zero phonological form fills place (Co) and the rest appear after the verb-base.
- c. Otherwise the monemes of Person, Gender and Number appear after the verb-base.

Thus with the imperfect active of "/-n-s-r-/" with the monemes: third person, masculine and singular, we have "/iṅṣuru/" (he supports) where the /i-/ is the realisation of the third person moneme filling the place (Co) this being the left-most member of Person, Gender and Number and has a non-zero phonological form realisation. However, in "/tansuru/" (she supports) the third person moneme has a zero phonological form realisation and so the left-most member /t-/, the phonological form of the realisation of the feminine moneme, fills the place (Co).

(24) Some allomorphs of the imperative moneme have an initial glottal stop and this occurs in place (Co).

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