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The Interaction of Morphology, Phonology, and Syntax

JUDITH L. KLAVANS

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Foreword by Arnold M. Zwicky

The problematic nature of items that are word-like in some ways but affix-like in others — clitics, in the broadest sense of that term — has been appreciated for millennia. The term 'enclitic' originates with the grammarians of Ancient Greek; 'proclitic' and the generic term 'clitic' were coined as grammarians and, eventually, linguists (in the modern sense) attempted to describe languages of a wide variety of structures.

In modern descriptions, until recently, clitics have been generally treated as constituting a special external layer of affixation, exterior to all uncontroversially inflectional affixes, and thus as a kind of (literally) marginal morphology, though as in the Sapir quotation with which Klavans began her 1980 University College London dissertation, ⟨Some Problems in a Theory of Clitics⟩, many analysts have expressed the intuition that clitics are syntactic formatives.

Further advances in understanding the nature of clitics had to wait upon the development of formal grammatical frameworks, especially for syntax; a certain level of explicitness is necessary for problems even to be seen and articulated. Within the broad family of frameworks known as 'generative grammar', this level does not seem to have been reached until the late 1970s. Though it builds on much earlier theoretical and descriptive work, Klavans's dissertation (known especially through the version distributed in 1982 by the Indiana University Linguistics Club) is in fact the first attempt to fit clitics of all types within a generative grammar.

The proposal is to treat clitics as (forms of) lexical items, with each such item marked for a small number of special syntactic and phonological properties, the 'parameters' of cliticization. The distribution of any particular clitic is thus seen as resulting from the simultaneous satisfaction of two types of distributional requirements on lexical items, syntactic and phonological.

Not surprisingly, the ensuing literature takes issue with virtually every detail of this proposal. Is there really a place for all clitics within this system, or are there two or more distinct types, subject to different sorts of distributional requirements? Are there eight different possible types of clitics within a particular syntactic domain, or does Klavans's system exaggerate the range of clitic phenomena? Are there no truly morphological requirements on clitic distributions, or does morphology provide parameters in addition to, or instead of, the ones Klavans lists? The richness of the literature on clitics since 1980 is in large part attributable to the fact that Klavans put forward clear, strong hypotheses that others could pursue, elaborate upon, reject, or replace with better ones.

Arnold M. Zwicky
University Professor
Ohio State University

Acknowledgments

Outstanding Dissertations in Linguistics Acknowledgments – 1994

I was somewhat astounded and certainly honored to receive the letter with the nomination to publish this dissertaion in the Garland series. The original dissertation was published in 1980, and such a hiatus is hardly common in a field that builds its reputation on the biannual creation of new theories. I was certainly very pleased to be able to provide some improvements for this version, to update the bibliography significantly, to provide several new indices (by subject, author, language), and to permit the linguistics community to have better access to other chapters of the original dissertation that did not find their way into published form. For example, my view is that the final chapter on Stress and Cliticization constitutes a contribution to the understanding of lexical and phrasal stress, as it expreses itself over the phrasal affix, known as the clitic. I did not spin articles from this chapter, so although it was available in the Indiana University Linguistics Club version of the dissertation, I feel it has stayed less available to the larger community than the parameterized view proposed in Chapter III, and later revised and published in *Language* (Klavans 1985).

In addition to the contribution of the Five Parameter, and then Three Parameter universal view of clitics, and in addition to the characterization of stress and cliticization, the dissertation contains many examples of different clitic types from several dozen languages, thus providing a valuable resource for subsequent research on clitics and cliticization. My primary dissertation advi-

sor, Dr. Neil Smith, Professor of linguistics at University College London, correctly insisted on data, and lots of it, counterbalanced with a strong abstract focus. This was reinforced by Geoffry Pullum, Richard Hudson, and Deirdre Wilson, all faculty members at University College London of the University of London. It has been nearly twenty years since I first met these scholars. The profound impact of their teaching, tutelage, and training remains with me, and has served in many aspects of my own career as a scholar.

For the Garland edition, Professor Tony Kroch of the University of Pennsylvania, and Professor Beatrice Santorini must be acknowledged for encouraging me to publish the work. With gratitude, I thank Dr. Evelyne Tzoukermann of A.T. & T. Bell Laboratories for valuable assistance and support in more aspects of the rewriting than I can enumerate. Martina Sharp has patiently provided expert formatting skills in producing the final camera ready form for this version.

I welcome the opportunity to express gratitude to my my very esteemed, respected, and adored colleague, Arnold M. Zwicky, University Professor at the Ohio State University, Department of Linguistics. Arnold was nick-named "Mr. Clitics" in the mid-seventies, with the release of his short descriptive and revealing paper "On Clitics". It was this paper that started my questioning. A then uppity young graduate student, having just completed by M.A. in Linguistics, summa cum laude, I wrote a long scathing criticism of this paper. Arnold replied, point for point, and the rest, as they say, is history. His influence on my thinking, both professional and personal, is profound and far-reaching.

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Dissertation Acknowledgments – 1980

I am happy to have this opportunity to acknowledge some of those whose advice and assistance have contributed to this thesis. Most important are the members of Department of Linguistics at University College London: Neil Smith, Richard Hudson, Geoff Pullum and Deirdre Wilson. My supervisor, Neil Smith, deserves special mention; without the challenge he provided for me throughout my training, I am sure I would never have taken the steps I did in developing as a linguist and a scholar. For specific help on individual languages, I wish to thank: Tamsin Donaldson (Ngiyambaa), Desmond Derbyshire (Hixkaryana), John Baldwin (Turkish), Jean Aitchison and John Wells (Classical Greek), and Dick Hudson (Beja). For help in typing, I thank Alison Jarvis, and my parents, who made me learn to type for myself. For financial support, I am grateful to the Jackson Lewis Foundation at University College London, and to the Social Science Research Council (Grant Number HR 5322).

For valuable support of a different nature, I thank my family and friends.

University College London
London, England

Preface

The impetus for this thesis came from a quotation in Sapir (1930), *Southern Paiute, a Shoshonean language*, in which the following discussion of ENCLISIS is given:

> By enclisis is meant the suffixing of certain elements to any word in the sentence, the resulting complex constituting a firm phonetic, but not a strictly formal, unit. Enclitic elements, except for some of the pronouns, never occur in other than enclitic form. In a "word" like ivi'ŋunt'car'ɔanI 'did I take a drink?', the preterital -ntca-, the interrogative -r'ɔa-, and the pronominal -nI 'I' are enclitic elements, not true suffixes, the true "word," formally speaking, consisting only of ivi'ŋU'to take a drink' (ivi- 'to drink' + momentaneous suffix -ŋu-). This is shown by the fact that the enclitic cluster (n)tcar'ɔanI can be appended, without bringing about any formal modifications, to a preceding word in the sentence; e.g. qan·i'va·tcar'ɔan ivi'ŋU'house-at-preterite-interrogative-I drink-momentaneous', 'did I drink at the house?'. Phonetically, the form 'did-I-at-the-house?' is a perfect unit, morphologically it is a word (qan·i-va·- 'house at') plus a number of exteriorly segmented elements that have no independent existence. *Enclisis is neither true suffixation nor juxtaposition of independent elements. It has the external characteristics of the former (including strict adherence to certain principles of order), the inner feeling of the latter.* It is one of the most characteristic processes

> of Paiute, doubtless of Plateau Shoshonean generally ... (Sapir 1930:70–71, my emphasis – JLK)

The word-like and the suffix-like properties of clitics still pose problems for linguistic theory today.

Indeed, many languages contain a set of elements called CLITICS which seem to exhibit some of the properties of the word and some of the properties of the affix. Due to this unclear linguistic status, clitics present interesting theoretical problems to analyses of language in which words are treated at a different level of description and analysis from affixes. The aim of this thesis is to clarify the status of clitics in linguistic theory.

This investigation shows that cliticization is not a totally unified phenomenon. Asymmetries in the behavior of phonological and syntactic clitics show that no single principle predicts all clitic behavior. Instead a set of five independent parameters is shown to be necessary to an adequate analysis of clitics. While the five parameters are the same for all clitics, the way a single lexically marked clitic interacts with these principles will affect what type of cliticization results, that is, whether cliticization is predominantly syntactic by nature, or predominantly phonological.

The introductory sections explain modifications to the original five parameter system to a more efficient analysis in terms of three parameters. Additional data not known to me at the time the thesis was written are presented to instantiate predictions arising from the theory. Chapter 1 gives examples of some of the types of item which have been called clitics, and points out their different characteristics. Chapter 2 considers some of the problems in arriving at a coherent typology of clitics, and in formulating a universal definition of the notion 'clitic'. Chapter 3 reviews the failure of previous analyses for deriving and placing clitics, including Copying, Migration, Base-Generation, Subcategorization Features, Readjustment Rules, Boundary Reduction, and Metrical Restructuring. Chapter 4 presents an alternative way to view cliticization in terms of five independent parameters which make empirical predictions about

about possible clitic types. These predictions, and other implications of the proposed analysis, are discussed. It is argued that the only way to formulate a unified analysis of cliticization is by distinguishing these five parameters as independent, but inter-related. Finally, Chapter 5 considers the morphology of host-clitic groups with particular emphasis on the relation between stress and cliticization.

Introduction

Introduction to the Outstanding Dissertations in Linguistics Series — 1994

Clitics remain a mystery. Properties of clitics and clitic behavior still form a body of evidence for both descriptive and explanatory approaches to the study of langauge. Observe, for example, the fact that clitics provide evidence for a lexicalist analysis and for base-generation within the Generalized Phrase Structure Grammar (GPSG) formalism (Miller 1992), for movement in Principles and Parameters Theory (Kayne 1991) or for providing evidence to support the claim that affixes within a word can satisfy argument structure requirements in Lexical Functional Grammar (LFG) (Bresnan and Mchombo 1987), and there are many other examples that can be found in the literature. See Halpern 1994 for a recent survey.

Why is this so? I believe it is the case that, since clitics fall at the intersection between phonology, morphology, and syntax, they are particularly revealing elements to study. They are also particularlly elusive, at the same time, with both universal and language-particular characteristics to round out their complexity and perplexity.

Since the initial writing of this dissertation in 1980, to the edition distributed by the Indiana University Linguistics Club in 1982, to the current edition, I have received a continual and steady stream of requests for both the Indiana edition of the dissertation and for the 1985 paper in *Language* (Klavans 1985) that summarized and expanded on Chapter 4 of the dissertation. Although my primary

research area is now in the area of computational, rather than theoretical, linguistics, I still receive a significant number of requests to review, respond, and react to happenings in the research on clitics and cliticization. These requests provide additional evidence to point to the fact that clitic behavior is used to understand other processes about language and languages, and that a deep understanding and explanation of the nature of clitics themselves still remains a significant challenge in linguistic theory.

Introduction to Indiana University Linguistics Club Edition – 1982

This thesis deals with the morphology and phonology of cliticization. The purpose of the study is to clarify the status of clitics within a theory of morphology and word structure.

The problem raised by cliticization in linguistic theory is that in general clitics appear to be independent words at the level of syntax while they are merely parts of words at the phonological and morphological levels. In this thesis I propose a way to represent clitics in the lexicon, and I make observations based on cliticization data which reveal the nature of the relationship between the syntax and phonology. Cliticization is not the only process to raise questions concerning the mismatch between the morphological word and the phonological word and involving syntactic processes which affect word internal structures. Other processes include case-marking, agreement marking, and certain phrasal phenomena such as noun incorporation and morphological marking of phrases. All these processes concern sets of words concatenated at the level of syntax, yet which appear to be subject to lexical rules and which also selectively undergo phonological rules as though they were single lexical items.

I have written this additional introduction because certain changes have occurred since the completion of the thesis in the summer of 1980.[1] The first change reflects a sharpening of my thinking about clitic positioning and clitic attachment. Clarification of the position I outlined in Chapters 2–4 of the thesis are summarized in the first part of this introduction, entitled "How Five Parameters Became Three." Other data which I discovered

after completing the thesis and which support the three parameter system are included here. The second change results from the effects of some important work on the theory of morphology which emerged after the thesis was completed. Among these are Lieber (1980), Marantz (1981), Mohanan (1982), Kiparsky (1982), and Selkirk (1982). In the next parts of this introduction entitled "The Status of Parameters and the Lexical Representation of Clitics" and "The Phonology of Cliticization," I include some comments on how the proposals in my thesis might be interpreted within the framework of Lieber (1980) and Kiparsky (1982).

1. *How Five Parameters Became Three*

In Chapter 4 of the thesis, I propose a system constraining clitic positioning based on the assumptions that (1) cliticization is a unitary phenomenon and (2) cliticization possibilities can be captured by five binary parameters. In fact, only three parameters are necessary; the discarded two parameters are actually part of the lexical entry of any lexical item, namely a specification of the entry itself and a specification of its lexical category (e.g. N, V).[2] The lexical entry for an enclitic will look something like:

[1] $\overline{X}$[[———] $\overline{X}$ = enclitic]

and for a proclitic the form is like:

[2] $\overline{X}$[proclitic = $\overline{X}$[———]]

For a clitic like the Ngiyambaa second position enclitic found in an example like:

[3] ŋadhay =ndu guya dha-yi
tasty =2NOM fish eat-PAST
'You ate a tasty fish.'

the subcategorization form given above is instantiated as:

[4] S[$\overline{N}$[[[ŋadhay N] $\overline{N}$] = ndu] ... ...]

but where the host is a phrase, as in the variant:

[5] ŋadhay guya =ndu dha-yi
tasty fish =2NOM eat-PAST
'You ate a tasty fish.'

the frame is instantiated as:

[6] $_{S}[\,[\,[\,[\text{ŋadhay}\,]_{N}\,[\text{guya}\,]_{N}\,]\,]_{\overline{N}}$ = ndu $]_{\overline{N}}$ ... ...]

In contrast, for an example like the Greek proclitic:

[7] hoi agathoi Spartioi
the strong Spartans

the entry will be instantiated as

[8] $_{\overline{N}}[\,[_{\text{det}}$ hoi] = $_{\overline{N}}$ [agathoi Spartioi]]

Note that in (8), the proclitic is labelled 'det'. The category label 'pronoun' was omitted from (4) and (6) for the sake of clarity. Further discussion on the form of subcategorization frames for clitics is given below.

The three parameters can be summarized as:

[9] **Parameter One: Initial/Final**
Parameter Two: Before/After
Parameter Three: Proclitic/Enclitic

The first two parameters encode configurational information about possible clitic positioning. Parameter One chooses the initial or final constituent within a given syntactic domain specified in the lexical entry. For example, the Greek proclitic in (7) occurs before the INITIAL node under $\overline{N}$. In contrast, Ngaŋcara clitics, illustrated in the thesis, occur before the FINAL node under S (see also (16) below in this introduction). Thus, the first parameter encodes DOMINANCE. Parameter Two expresses linear PRECEDENCE. It specifies that a clitic precedes or follows the host chosen by P1. For example, the clitic *=ndu* in (2) occurs AFTER the host *ŋadhay* 'tasty', the clitic in (3) precedes, i.e., occurs BEFORE, the host noun phrase *agathoi Spartioi* 'strong Spartans'.

The third parameter encodes phonological information about the direction of phonological liaison. Note that it is generally assumed that if a clitic is associated syntactically with a host, that

its phonological attachment is of necessity with the same host, as exemplified in (1)–(4). This is the most common case, but does not hold across languages. The case I refer to is like the following. Suppose a clitic, like the Greek determiner, occurs to the left of the first lexical item within a phrase repeated here:

[10] [clitic $_{\overline{N}}$ [ ]] $_{\overline{N}}$

This is exactly the schema given in example (8). Now suppose that this same clitic attaches phonologically to whatever is to its left, i.e., not to the first word in the $\overline{N}$, but to $\mathcal{P}$ in (11).

[11] ... $[\mathcal{P}]$ = [[clitic $_{\overline{N}}$ [ ]] $_{\overline{N}}$

where '=' represents phonological attachment. Just such a puzzling case in fact was found in Ngaŋcara, a language of Australia. In this language, a morphologically preverbal clitic attaches phonologically as an enclitic. These data are given in Chapter 4.

Subsequent to writing the thesis, data on Kwakwala NPs which also illustrate this point were brought to my attention.[3] Like the case of Ngaŋcara discussed in the thesis, Kwakwala (Kwakwala) has a similar system of cliticization in which the occurrence of clitics depends on phrasal syntax in one direction, but phonological attachment is in another direction. Kwakwala is a VSO language in which object and oblique NPs follow the subject NP. The [–NOM] NPs contain particles to identify their grammatical function as 'obj', 'oblique', and so on. The particles are part of the NP, as shown in the following example from Levine (1980):

[12] nəp'id -i- da gənanəm x̣a guk^{w} sa t'isəm
throw-deictic-da child obj house obl rock
'The child hit the house with a rock by throwing.'

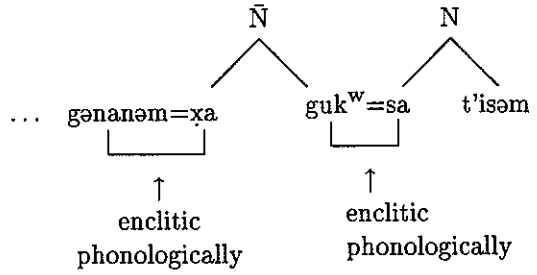
In this example, the object and oblique function-marking particles are *xa* 'obj marker', marking *guk*^{w} 'house', and *sa* 'oblique marker' marking the noun *t'isəm* 'rock' as shown below:

[13] [x̣a guk^{w}]$_{\overline{N}}$
obj house

[14] [sa t'isəm]$_{\overline{N}}$
obl rock

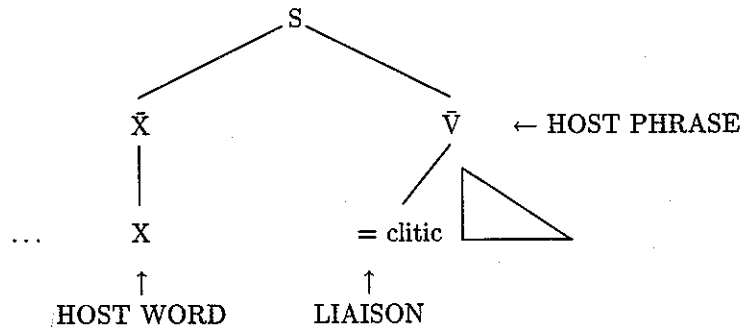
As shown in (12)–(14), the function-marking particles precede the noun that they mark, within the $\bar{N}$. At the same time, however, they are phonologically enclitic to the leftwards adjacent $\bar{N}$. That is:

[15] (from (12))

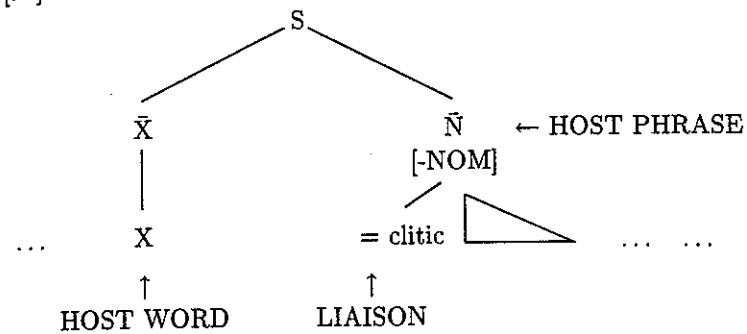


Since this is a key observation, and a difficult concept, I will illustrate the point again schematically. Compare the diagram given in the thesis for the pronominal clitics in Ngaṇcara, repeated here, with an analogous schema for Kwakwala. Since the Kwakwala nominal markers have the option of being enclitic on the word preceding them, they are similar to Ngaṇcara with just one difference: in Kwakwala instead of V appears a [-NOM] NP. The constituent represented by X is again any leftwards adjacent word:

[16] Ngaṇcara enclitic attachment (see Chapter 4, examples (39)-(48)).

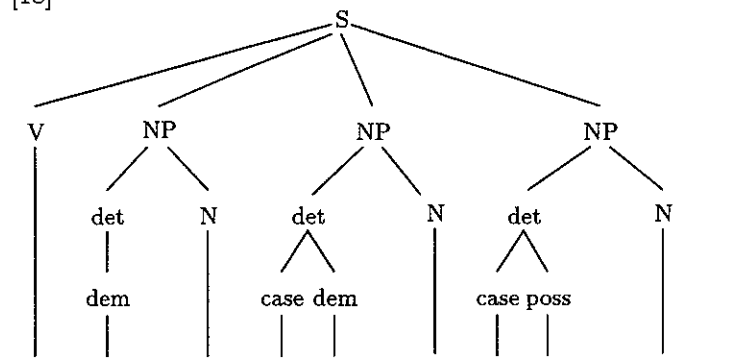


[17] Kwakwala nominal marker attachment



Similar observations are made in Anderson (1981). In fact, his P-markers for Kwakwala simple sentences incorporate the facts about bidirectional clitic attachment that are given in this thesis. Anderson comments that, because the primary determiner element appears as a clitic attached to the PRECEDING word of the clause, each element appears to be marked not for its own case and/or deictic status, but rather for that of the FOLLOWING element. However, Anderson correctly observes that once these demonstratives are recognized as clitics, rather than inflections, their behavior is less puzzling. The following diagram shows how Anderson (1981) illustrates the unusual properties of the Kwakwala determiner constituent:

[18]



'The man clubbed the sea-otter with his club.'

This provides so far two clear cases to motivate the separation of the configurational from the phonological aspects of cliticization. The theory of cliticization developed in this thesis permits a formal distinction between these aspects of clitic attachment, allowing an account for the apparently odd properties of enclitics like case-markers in Kwakwala and preverbal pronominals in Ngaṇcara. The formal separation of clitic positioning from the phonological properties is unique to this theory.

2. *The Status of Parameters and the Lexical Representation of Clitics*

In the thesis, I collated data on clitics from a number of languages making certain observations about placement and attachment possibilities. These observations form the basis for the descriptive statements embodied in the three parameters. However, I did not cover questions such as how these parameters fit into an overall theory of morphology. In the following paragraphs I consider two possibilities. One is that the parameters are a set of well-formedness conditions on clitics, and that clitics which do not conform to their requirements are filtered out as ungrammatical. Another possibility, the preferred one, is that the three parameters, as descriptive statements, are derivative of more fundamental properties of lexical

items. In particular, the three parameters fall out of independently motivated subcategorization frame requirements on lexical items, and from general constraints on the application of phonological rules.

As for subcategorization frames and the lexical representation of clitics, consider that clitics, like affixes, are not freely inserted into structures. Clitics must be listed in the lexicon with information to specify in what PHRASAL structure they can appear, i.e. attached to $\overline{N}$, $\overline{V}$, S., as shown above in (1) and (2). This means, for example, that a pronominal clitic could be inserted from the lexicon into a syntactic structure, just like any pronoun. But at the same time there are constraints on insertion which result from the inherent subcategorization feature on that clitic. Compare the subcategorization frame schemata in (1) and (2) to the ones for affixes:

[19] $_{Y}$[prefix- ———] $_{Y}$[——— -suffix]
where Y is a member of a lexical category

For clitics, a host can be a member of any word class, but must be dominated by a specified phrasal class, X-phrase. But for affixes, the converse holds: the stem must be a member of the specified word class, but can be dominated by any phrasal class.

Since I have claimed that cliticization is actually phrasal affixation, a reflection of this fact would naturally be expected in the lexical representation of clitics. Most of the clitics I researched do in fact attach to phrasal nodes. The only thorny exception so far is French and Spanish verbal clisis, which appears to have V as the relevant domain, not $\overline{V}$. In earlier work, I proposed a constraint on the lexical representation of clitics. I argued that a phrasal requirement on the domain of cliticization was by necessity part of the lexical representation of clitics. However, my later work indicates that the phrasal requirement might be too strong, because it would eliminate the Spanish and French type of verbal clitics. I now hold that the non-phrasal domain for just these clitics reflects that they are in fact truly verbal features, as Groos (1976) and Borer (1981) would have it. This change in the label of the subcategorizing bracket from $\overline{V}$ and V might be an indication that these clitics are becoming affixes, reflected in the fact that they have insertion requirements resembling those for other verbal affixes.

Certain comparisons can be drawn between the way I conceive of subcategorization frames for clitics and affixes and the theory of labelled bracketing proposed in Lieber (1980). According to Lieber, the lexicon consists of a list of all unanalyzable terminal elements and their lexical entries. Lexical elements are inserted into unlabeled trees subject to subcategorization restrictions on affixes, and then lexical trees are labeled by means of general feature percolation mechanisms. As for the form of the subcategorization frame itself,

> ... affixes differ from non-affix morphemes only in that affixes have as part of their lexical entries frames indicating the category of items to which they attach as well as the category of items produced. (Lieber 1980:63)

That is, a subcategorization frame indicates not only the category to which an item can attach but also can specify features of that item. Lieber exemplifies with the prefix *in-*, which in English attaches to a variety of adjectives, and with the English suffix *-ive*, which attaches only to Latinate verbs:

[20] PREFIX: in- category/subcategorization $[_A$ — $[_A$

[21] SUFFIX: -ive category/subcategorization $[+Lat]_V$ — $]_A$

Compare this to frames for stems:

[22] STEM: run
category $_V[$ — $]_V$
insertion frame: NP — (NP)
diacritics: [-Latinate] ...

[23] STEM: product
category $_N[$ — $]_N$
insertion frame: for N's
diacritics: [+Latinate]

Lieber emphasizes that lexical entries for affixes are identical to lexical entries for non-affix morphemes, except for the presence of subcategorization information in affixes.

The theory of subcategorization embodied in Lieber's Theory of the lexicon is easily extended to include my proposals about subcategorization frames for clitics. All that needs to be specified

is the phrasal requirement on subcategorization. No extra mechanisms would need to be added to accommodate the facts for clitics. Like affixes, clitics subcategorize for hosts, including reference to features. As for affixes, hosts do not subcategorize for clitics in the lexicon. Whatever requirements hosts might place on clitics (as for verbal argument clitics) are not part of a lexical subcategorization requirement of the host.

3. *Some Comments on the Phonology of Cliticization*

In general, affixes exhibit various types of affix-like phonological attachment to roots and stems, e.g. '+' type of phonological behavior, '#' type of behavior, and so on. And, in general, words can be isolated, at least in slow speech, indicating that they are cohesive units and independent of surrounding words, much like marbles or building blocks. But what is peculiar about clitics is that they typically exhibit affix-like cohesion phonologically for only a sub-set of phonological rules, yet at the same time exhibit non-affix-like independence for certain other phonological rules, all within the same language. In Chapter 5 of the thesis, I give a review of some of these anomalies with respect to Stress Assignment.

Since that time, I have done subsequent work concentrating on the phonology of clitics. I suggested (Klavans 1982b) in the framework of level-ordered phonology and morphology (Kiparsky 1982) that there are two clitic types: lexical and postlexical, i.e. one in each component of that theory. Specifically, the hypothesis entails that cyclic rules will be able to apply to clitic=host and host=clitic sequences if and only if the clitics are of the lexical type, i.e. if they subcategorize for both a phrase and a specified lexical item. In contrast, no cyclic rules operate on postlexical clitics, which have a phrasal but not lexical requirement on the subcategorization frame.

To sum, although there are still certain problems arising from my claims, I believe that the central idea that cliticization is phrasal affixation is fundamentally correct. I show that languages have universally only a limited set of options in the way they place clitics. In particular, I argue that three binary parameters determine clitic placement possibilities. I explicitly set out exactly which clitic types are predicted by my system, and which are excluded. I make

some suggestions on how clitics actually attach to hosts, although details remain to be worked out. Obviously, some mechanism is needed to ensure that host=clitic sequences select certain intra-lexical phonological rules, while ignoring others. Furthermore, the nature of the path from the syntax to the lexicon and from the lexicon back into the syntax has yet to be worked out. This thesis and subsequent work make some positive suggestions in this direction.

Introduction to the Dissertation

A minimal requirement imposed on linguistic theory is that it characterize the basic elements of linguistic description and specify the levels at which they appear. Traditionally, linguists recognized two types of basic unit: (1) WORDS (or free forms) such as *severe, go, halibut*; and (2) AFFIXES (or bound forms) such as the plural marker *-s* of *tables* or the negative prefix *in-* of *incomplete* or *incompetent*. Each of these types is then further subdivided: the former into such lexical categories as Noun, Verb, Adjective, etc.; the latter into derivational and inflectional prefixes, suffixes, infixes, combining forms, etc. (A full discussion of the problems of defining the notion 'word' is beyond the scope of this thesis. See Matthews (1974), Juilland and Roceric (1972).) However, many languages also contain elements which have some of the properties of the word and some of the properties of the affix. These are often referred to as CLITICS.

Although the existence of clitics has long been recognized (Wackernagel (1892), Menendez Pidál (1904), Sapir (1930) and others) there have been few systematic attempts to incorporate a theoretical account of their properties into a general theory of language. (Emonds (1975), Quicoli (1975), Grimshaw (1980).) Further, it is not clear that all the items which have been called clitics are similar in kind, and it is accordingly unclear at what level(s) of grammatical description they should be treated. For example, Aronoff (1976) begins with a discussion of the two traditional types of morphological phenomena, derivation and inflection. He then devotes a short section to "other types of morphology" (pp. 3–4) in which only cliticization is discussed and described as "'grammatical' morphological phenomena" which cannot be subsumed under inflection"

(my emphasis). Aronoff recognizes in these paragraphs the formal similarities between cliticization and inflectional affixation, specifically in his example of cliticization and agreement in Classical Hebrew. But at the same time he acknowledges the apparently more purely syntactic nature of cliticization in his examples of pronominalization from Syriac and clitic movement from Navajo.

The object of the present research is to fill this gap in linguistic theory by providing a formal theoretical account of the nature and behavior of clitics. More specifically, I will challenge the hypothesis that the disparate facts about clitics that have been revealed in recent research can be adequately accounted for by a theory of boundary marking and boundary reduction rules, such as proposed in Selkirk (1972), Chomsky and Halle (1968), and others, or by a syntactic rule of clitic attachment such as proposed in Bresnan (1971), among others, or by a morphological rule of feature expansion such as suggested in Aronoff (1976), or by an underlying clitic node associated with nominals as argued by Kayne (1972).

My claim is that clitics are lexically marked [+clitic] and are positioned and attached by rules which are sensitive to five, and only five, parameters. By making a distinction between independent phonological and syntactic factors, a unified analysis of cliticization becomes possible. Previous attempts are reviewed in Chapters 2 and 3. In Chapter 4, a new analysis of cliticization is given. Chapter 5 is an analysis of the relationship between stress and cliticization. My goal is to formulate linguistically relevant universals concerning clitics and cliticization in natural language.

Research in language universals has taken one of two methodological paths (both of which have been outlined succinctly in Comrie (1978)). It is possible, in principle, to start with a full description of a particular phenomenon in one particular language in order to form hypotheses about language universals. This is the approach taken by Chomsky (most recently in Chomsky (1980:3)), in his justification of working in detail on English only. His approach is based on the idea that species-specific innate abstract structural properties limit the class of possible learnable natural languages. Thus, discovery of these abstract principles—which have been hypothesized on the basis of detailed work on a single language—should give insight into the set of universal possible properties of language.

Alternatively, it is possible to examine a wide variety of languages and to hypothesize from the data what the universal properties, i.e. language independent properties, of language could be. From this, one can proceed in two directions. First is to see how these language independent properties are expressed in other individual languages. Second is the task of verifying or disconfirming hypotheses by examining other data from many languages. Comrie (1978) cites several pieces of convincing research to support his argument that this second methodology is a valid one as well.

Among the work Comrie cites is Derbyshire (1977) and Pullum and Derbyshire (1978) which challenges Greenberg's (1966) word order typology with data from Hixkaryana, a Carib language of Brazil. They show how Hixkaryana belongs to a word order type previously thought not to exist: it is OVS, that is, its object precedes the subject in basic word order, without the verb preceding both. This is in contradiction to a strong reading of Greenberg's proposed word order universals. In this second methodological approach it is argued that work on language universals should take account of data from a wide range of languages in the establishment of language universals. Ideally, of course, the best of all possibilities would be to have detailed knowledge about a wide variety of languages. However, in practice this seems a near impossibility for the moment. What seems to happen is that as one increases the breadth of coverage, there is an attendant decrease in depth.

This study takes the second approach to language universals, despite its problems, since the focus is not on the particular forms that exist in any one language, but on valid language independent statements. I believe that any omission due to lack of depth in any one particular language will be offset by the benefits of a study with a wider range and breadth of coverage. The following pages provide a variety of examples of clitics from many different languages, discuss their language independent properties, and offer hypotheses about the universal nature of the process of cliticization.

Notes

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[2]For the purpose of this thesis, it does not matter in what notation the lexical entry is listed, such as in a grid on phonological features. Nor does it matter whether the category membership is given in terms of features such as proposed in Jackendoff (1977), or any other way.

[3]I thank Judith Aissen for pointing me to the Kwakwala data.

Terminology

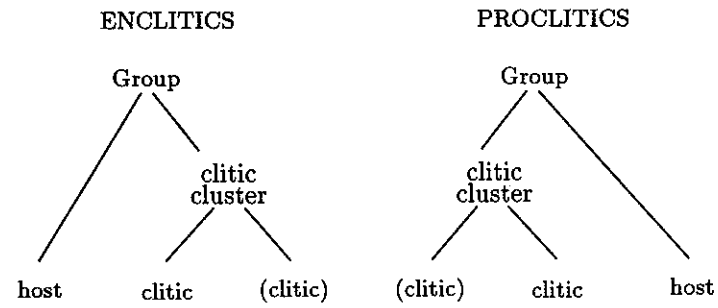
Following Zwicky (1977), the terms used here are:

1. HOST – the word to which a clitic attaches
2. CLITIC – the item which attaches to a host word
3. CLITIC CLUSTER – a sequence of clitics as in *=me=lo* (see below)
4. In order to indicate the difference between clitics and affixes, the marker '=' is used where the normal orthography includes the clitic as part of the host word, in contrast to '-' which indicates an affix boundary, as in:

   (Spanish) (i) dá=me=lo — Give me it!

   (Ngiyambaa) (ii) ŋa:-nhi =dju =nu:-gal — I saw you all.
   see-PAST=1NOM=2OBL-pl.

   However, when the normal orthography does not include the clitic as in *me lo dio*, the '=' is not used.
5. GROUP – a host=clitic(s) or clitic(s)=host sequence:



Nothing theoretical is implied by '=' or '-'.
Underlining clitics is for clarification, not emphasis.

In other terminology, a host word alone is often called a GRAMMATICAL WORD, whereas a group is often called a PHONOLOGICAL WORD. The two are not necessarily isomorphic, a fact which has, in part, motivated this thesis.

Chapter 1

Initial Facts

Since the term 'clitic' tends to be loosely used in current linguistic theory, it is as well, before giving a detailed definition of 'clitic', to consider examples of the types of element the term is normally used to describe. This chapter will present examples of different kinds of clitics to provide some of the factual material against which I will develop the more theoretical parts of this thesis. Facts and arguments which have no bearing on this general introduction are omitted.

1.1 Romance Verbal Clitics

In descriptions of Romance languages, the term 'clitic' most commonly refers to unstressed forms of the personal pronouns, as in:

[1] Te lo digo ahora.
youDAT itACC tell-1-sg-PRES now
'I tell it to you now.' (Spanish)

[2] Dí =me =lo ahora
tellIMP=meDAT=itACC now
'Tell me it now' (Spanish)

[3] Maria lo vuole.
Mary it wants-3rd-sg.PRES
'Mary wants it.' (Italian)

[4] Je le vois.
I him see
'I see him.' (French)

In (1)–(4) the pronouns (*me, lo, te, le*) are labelled 'clitic' (sometimes called 'conjunctive' pronouns, 'atonic' pronouns, 'bound' pronouns) primarily due to their inherent UNSTRESSABILITY. As shown in (5), they cannot occur as a single (word) utterance, and cannot normally receive emphatic stress:

[5] ¿A quién lo digo? 'To whom do I tell it?'
a. *me 'me' DAT (clitic)
b. a mí 'to me' DAT (non-clitic)

[6] Qui le voit? 'Who sees him?'
a. *je 'I' (clitic)
b. moi 'I' (or 'me') (non-clitic)

In contrast, full form pronouns (also called 'disjunctive' pronouns, 'tonic' pronouns, 'free' pronouns) are so-labelled due to their STRESSABILITY, i.e. their potentiality for taking stress, as shown above in (5a) and (6b).

Paradigms such as (5) and (6) are the ones most commonly used to justify categorizing object pronouns in Romance as unaccented CLITICS rather than stressable free forms (Menendez Pidál (1904), Kayne (1975), Radford (1975), and others). In short, clitics by definition must 'lean on' a host item for stress. Indeed, the origin of the words προκλῑ́νω /proklino/ and ενκλίνω /enklino/ are said (Vendryès (1904:63)) to have been coined by the grammarian G. Herman at the beginning of the eighteenth century to describe clitics in Classical Greek from the root κλῑ́νω /klino/, meaning 'to lean on, to bend'. (See also Goodwin (1894), Smyth (1920), and Postgate (1924).)

Romance pronominal clitics tend to occur in different positions from full pronouns and other NP's vis-à-vis the verb with which they are structurally associated, as in the following examples from Spanish, which is typical of the Romance family in this respect:

[7] a. Veo el libro. (Spanish)
b. *El libro veo.
'I see the book.'

[8] a. Lo veo.
b. *Veo lo.
'I see it.'

In (7)–(8) the clitic *lo* must precede the tensed verb; in contrast, the NP *el libro* 'the book' follows. Example (7b) would be acceptable with sufficient pause between constituents and with a clitic copy, indicating that the object *el libro* 'the book' is left dislocated: *El libro, lo veo* 'The book, I see it'.

There are some exceptions. For example, clitics in Spanish must FOLLOW non-tensed verbs , i.e. gerunds, infinitives, and imperatives, as in (2), (9) and (10):

[9] a. Dí=-me=lo.
b. *Me lo di
'Tell me it!' (cf. (2))

[10] a. Magdalena está cantándolo.
b. *Magdalena está lo cantando.
'Magdalena is singing it.'

Until the fifteenth century, under certain conditions, examples like (10b) were grammatical with the clitic joined to *está* as in *está=lo cantando*. (See (11) and (12) below and Chapter 2 for discussion of the development of clitic positioning in the history of Spanish.) In sum, pronominal clitics in Modern Spanish precede their tensed verbs, while full pronouns and NP's follow a tensed verb.

In Modern Romance, pronominal clitics require their hosts to be verbs, as seen in (1)–(9) above. However, this was not always the case. For example, in Archaic Spanish, the category requirement on hosts was not so strict, as seen in (11), where the enclitic *me* follows the complementizer *que* 'that':

[11] Que me tú dizies
that to-me you say-FUT
'That you will tell me'

Evidence that *me* 'me DAT' is indeed enclitic on *que* 'that' in (11) and not proclitic on *tú* 'you NOM' comes from host=clitic combinations, where final e apocope (see Harris (1969), Lapesa (1965), Menendez Pidál (1904), etc.) has applied, giving:

[12] Quem_ diestes (from *que=me*)
that=to-me tell FUT/SUBJ
'... that you might tell me ...'

[13] Fuel_ ver (from *fue=le*)
III/sg went=to-him see
'III sg. went to see him.'

The forms *quem* and *fuel* are very common in Old Spanish.

Another example of a non-verb host for a clitic in Old Spanish is:

[14] Una féridal_ deva.
Una herida le daba.
IIIsg a wound to-him gave.
'IIIsg gave him a wound/hurt him.'

where in (14) the host is the NP *una férida*, the archaic form of *una herida* 'a wound'.

That cliticization is sensitive to verbal structure is evidenced in the following French examples, from Gaàtone (1976:169), where the internal verbal structure varies but the phonetic context does not:

[15] Va l'arracher (French)
Go tear it off!

[16] Va les arracher
Go tear them off!

In (15) and (16) the object pronoun of the sentence with *arracher* 'tear off' is proclitic to that infinitive as evidenced by the elision and liaison preceding the initial vowel. In contrast, in the following examples:

[17] Fais-le arracher (French)
Have it torn off!

[18] Fais-les arracher
Have them torn off!

the pronoun is enclitic on *fais* and thus undergoes neither liaison nor elision. Similar examples could be constructed for Spanish (see Emonds (1975:237)), Italian, Portuguese, etc.

Menendez Pidál (1904:253–4) cites interesting data from Old Spanish. When the dative occurs with an accusative, as in:

[19] Dedit ĭllī ĭllum (Latin)
he-gave to-him it.

the post-verbal forms became:

[20] ĭllī - ĭllu > (i)lliello > gello > gelo

in Castilian Spanish. (This is the historical antecedent of what Perlmutter (1971) describes in terms of the "Spurious *Se*" rule.) Pidál says that:

> "fuera de esta combinación de dos pronombres enclíticos, la unión del dativo con cualquier otra vocal siguiente no es tan íntima."
>
> 'Outside of this combination of two enclitic pronouns, the union of the dative with any other following vowel is not as intimate.'

His other examples are (21) and (22):

[21]

	Latin		Old Spanish (up to XIV)
Dédit- illī	illa carta	>	Dió-le la carta
give+III+sg-him+DAT	the letter		

[22] Dédit-illi-illa > Dió-ge-la
give+III+sg-him+DAT-it+ACC+FEM

In (21) there are two tonic groups, whereas in (22) there is only one. So far this is analogous to the French examples cited above.

The interesting fact is that in the dialect of León (Leonés) and in Portuguese, the *lli* of the dative was treated as intervocalic before any following vowel, not just the vowel of an adjacent enclitic as in (22), but before the vowel of an article as in (23), or nominal as in (24):

[23] Dió-ge ela carta.

[24] Dió-ge otra.

This suggests that the entire group, both in (23) and (24) was, in Old Leonés, one single tonic group. Compare, in particular, Old Castilian (21) to Old Leonés (23).

In addition to the personal pronominal clitics discussed above, some Romance languages also have clitics corresponding to locatives and prepositional phrases, for example, French *en* and *y* are of this type:

[25] L'homme en a mangé beaucoup. (French)
'The man has eaten many of them.'

[26] J'y vais tous les jours.
'I go there every day.'

In (25) *en* 'of them' is proclitic on *a mangé* 'has eaten', and in (26) the clitic *y* is part of a single phonological group *j'y vais*.

No discussion of clitics in Romance would be complete without mention of the phenomenon in Modern Spanish and Modern Italian known variously as Clitic Promotion, Clitic Climbing, and Clitic Movement. Some examples are:

[27] Quisiera poder cantártelo. (Spanish)
Quisiera podértelo cantar.
Te lo quisiera poder cantar.
'I would like to be able to sing you it.'

[28] Maria vuole comprarlo. (Italian)
Maria lo vuole comprare.
'Maria wants to buy it.'

In these sentences, a clitic from a lower clause appears to have moved into the higher clause. A review of the various explanations and analyses of the complicated facts of constraints on Clitic Promotion is given in Chapter 3. Important to notice for now is that, on the basis of sentences like these, it has been argued that clitic words may be capable of undergoing what appears to be SYNTACTIC movement, (i.e. by transformational rule), much like any "true" word or phrase.

So far, the clitics in Romance have been presented in essentially categorical terms (pronouns), with reference to the internal phonological cohesion of the host=clitic(s) or clitic(s)=host group as regards stress. More specifically, each group consisting of HOST=CLITIC(S) or CLITIC(S)=HOST usually receives only one primary stress, and, in general, that stress remains on the host word. (See Chapter 5 for more on stress.)

1.2 Second Position Enclitics

A comparison of verbal clitics with another type of clitic will be useful here: the SECOND POSITION (henceforth referred to as '2P') enclitics. Informally, what is meant by 2P is: "enclitic on the first word" (sometimes the last word in the first phrase) of a sentence. Pullum (1980) suggests that 2P means "enclitic on a leftmost node in the (surface) phrase marker." (For a more technical definition of 'leftmost node', see Pullum (1980).) For example:

[29] ŋa:-nhi =yanbi: =dju =nu: (Ngiyambaa)
see-PAST=ADD TOPIC=1NOM=1OBL
'Also, I saw you.' (Donaldson p.c.)

[30] agathós =tis (Classical Greek)
good-man=certain
'a certain good man'

[31] Nangangalakal=ho=ba si Ernesto? (Tagalog)
in business=polite mkr=Q mkr N mkr Ernesto
'Is Ernesto in business, sir/ma'am?' (Bowen 1965:137)

[32] Někdo =mu =to ukázal (Czech)
somebody=to him=it showed
'Somebody showed it to him.' (George and Toman 1976:2)

[33] $m^{w}aí^{e}$=campa^{a} =ŋ 'aik·χA (S. Paiute)
that =only =he says
'That is all he says.' (Sapir 1930:95)

[34] Xušal =xo =ba xabarkəray wə (Pashto)
Khosal indeed should you informed was
'You should indeed have informed Khosal.' (Tegey 1977:131)

First, note the wide variety of morpheme types which appear enclitic in 2P: pronouns in (29), (32) and (33); topic marker in (29), definite adjective in (30); politeness marker and question marker in (31); sentential adverbs in (33) and (34), and a modal in (34). This is just a random sample of the wide variety of 2P enclitics found across languages; there are many more, as will be seen in later discussions.

Second, (29)–(34) show that a diverse selection of languages refer to the notion of 2P for enclitic placement. Wackernagel (1892) recognized that enclitic particles in a number of Indo-European languages tend to appear in 2P, a phenomenon known to classicists as Wackernagel's Law. It has even been claimed that French refers to 2P by Fiengo and Gitterman (1978). They propose the following (rather unilluminating) Clitic Placement rule:

[35] Cliticize

where 'the predicate CLITICIZE is to be interpreted as the fronting of +PRO elements to second position' (p. 119).

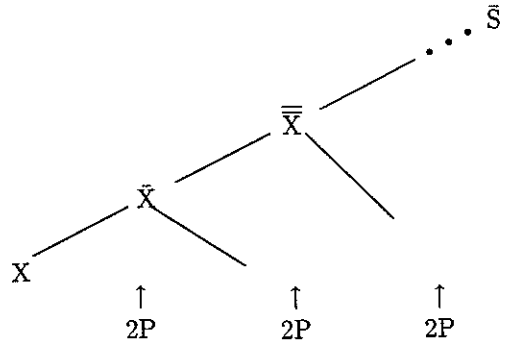
The obvious question arises: how is second position for a given language determined? An equivalent way of putting the question is: how is a specific leftmost node picked out by the grammar of a language? One possible realization of 2P would be **following the first word**:

[36] S [clitic
#word# #word# #word# #word# ...
↑
2P]

The location indicated in (36) is in 2P.

More specifically, what is usually meant by 2P for enclitics is: **enclitic on a leftmost node meeting conditions C** where the conditions C are language specific. An informal representation of 2P locations for enclitics is given in Figure 1.1.

Figure 1.1: Second Position Enclitic Placement



For example, in (29)–(34) above, the enclitics follow the first WORD, and are phonologically dependent on that word. However, in the following examples from Ngiyambaa, 2P means following any first CONSTITUENT, i.e. any leftmost node:

[37] ŋadhay=ndu guya dha-yi (Ngiyambaa)
tasty =2NOM fish eat-PAST
'You ate a tasty fish.'

[38] ŋadhay guya=ndu dha-yi
tasty fish =2NOM eat-PAST
'You ate a tasty fish.'

The focus of (37) and (38) is slightly different as indicated by underlining in the English gloss. In (37) the enclitic pronoun *=ndu* '2NOM' attaches to the first word *ŋadhay* 'tasty', whereas in (38) the 2P enclitic is attached to the entire phrase *ŋadhay guya* 'tasty fish', although the actual phonological attachment is between the adjacent words *guya* 'fish' and *=ndu* '2NOM'. Evidence for this claim is given below where the phonological facts on the host=enclitic union in Ngiyambaa are discussed.

The first constituent need not be an NP. In (39) the enclitic pronoun *=nam-bula* '3ABS-DU' occurs after the constituent verb + adverb: example (40) shows clitic placement after the first word, the verb *gunumanhi* 'energetically move-PAST':

[39] gunuma -nhi dhugay=nam-bula: bibuwa-nhi
energetically move-PAST indeed =3ABS-DU run -PAST
'They ran really hard' (Donaldson 1980:1:56)

[40] gunuma-nhi=nam-bula: dhugay bibuwa-nhi

Finally, for some clitics, 2P can include $\overline{S}$ at the top of Figure 1.1, i.e. in the proper analysis BX which defines B as a leftmost node, X may be null in some languages, as in the following examples, also from Ngiyambaa:

[41] ŋina -la: dhibi ginda-nha=gula:y
thisABS-EST bird+ABS laugh-PRES-LIKE
'(It is) as if this bird is laughing'
'This bird is sort-of like laughing' (informal gloss)

Very similar examples are given in Karttunen (1975) for Finnish:

[42] Minä=kin syön jäätelöä.
I =too eat ice cream
'I too (as well as someone else) am eating ice cream.'

[43] Minä syön jäätelöä =kin
I eat ice cream=too
'I'm eating icre cream too (as well as something else).'

As reflected in the gloss, there is a difference in focus between the two variants (42) and (43). (See Karttunen (1975b) and Karttunen and Peters (1975) for more on the pragmatics of clitics in Finnish.)

Tegey (1977a) has argued that 2P in Pashto can be after the first stressed vowel, even if that vowel is part of a morpheme. One example of what he claims is intramorphemic clitic placement is:

[44] áxistə =de
=you

[45] á =de= xistə
=you=
'you were buying it'

where the root for 'buy' is *áxistə*. In (44) the clitic *=de* appears following the verb *áxistə*, and in the variant (45) Tegey argues

that *=de* appears intramorphemically. Further, on the basis of a few examples like (44)–(45), Tegey argues that a syntactic rule of clitic placement must be sensitive to STRESS and to the INTERNAL MORPHOLOGICAL STRUCTURE of words. Kaisse (1980b) argues against Tegey and claims that the segment *á-* as in (45), is a prefix and thus an independent morpheme. Therefore, according to Kaisse, Clitic Placement in Pashto need not reach into the INTRA-morphemic structure of the word. Rather, Clitic Placement is INTER-morphemic. Still, for Kaisse (1980b) Clitic Placement could reach into the morphological structure of the word. Against this, I argue (Klavans (1979)) that the minimal unit for second position clitic positioning is the word, not the morpheme.

Serious theoretical problems obviously arise in characterizing the notion of 2P. Unlike verbal clisis, as in Romance, 2P clitics are not attracted to a specific category node. Rather, their placement depends on a linear notion POSITION coupled with a structural notion CONSTITUENT. Hale (1973) for Walbiri, Tegey (1975) for Pashto, Steele (1977) for Luiseño, and Fiengo and Gitterman (1978), among others, argue that 2P placement is a transformational rule which moves a specified set of items into an ill-defined place 'second position'. But the problem with this is that within transformational theory, there is no way to refer to the notion 'position' involving a count, as is argued by Morin (1979) in his reply to Fiengo and Gitterman (1978). Alternatively, an account in terms of surface filters again obscures the question of how clitics manage to converge in 2P, and how 2P is 'recognized' by clitics. These complex questions are further addressed in the next three chapters of this study.

1.3 Comparison of Verbal Type and 2P Type Clitics

1.3.1 Cliticization and Affixation: Host Requirement I

Perhaps the most striking difference between cliticization and affixation is that affixes attach to roots and stems to create words, whereas clitics attach to structures which can occur alone as words, INDEPENDENT OF THE PRESENCE OF THE CLITIC. However, some

affixes can and do attach to words, e.g. nation/nation-al, complete/in-complete. Indeed, the problems of demarcating words, clitics, and affixes is dealt with throughout this thesis. Consider:

[4] Je le vois. 'I see him.'

the clitics *je* and *le* are proclitic on the host verb *vois*, which can itself be an independent word, as shown in (46):

[46] C'est moi qui vois la voiture.
'It is I who sees the car.'

Similarly, although the English clitic *n't* attaches to the irregularly conditioned allomorphic form of the host verb, as shown below:

[47] won't from will + not (*willn't)
shan't from shall + not (*shalln't)

the non-suppletive form is an independent word (cf. did/didn't, should/shouldn't, must/mustn't, etc.).

1.3.2 *Clitic Types: Host Requirement II*

Let us now compare the two types of clitic I have presented. Consider again the Italian verbal clitics in (3) and the Czech 2P enclitics in (32):

[3] Maria lo vuole (Italian)
Mary it wants-3rd-sg.PRES
'Maria wants it.'

[32] Někdo =mu =to ukázal (Czech)
somebody=to him=it showed
'Somebody showed it to him.' (George and Toman 1976:2)

In strictly linear terms, the form of these two sentence types is identical:

[48] subject clitic pronoun(s) verb

But in Italian (Portuguese, French, Spanish, etc.) the clitics must attach to a VERB, either proclitically or enclitically, as schematized for proclisis in (50a):

[49] a. Verbal Clisis
subject [clitic(s) = verb]

In contrast, 2P clitics attach to whatever is in INITIAL POSITION, and are always ENclitic, as shown below:

[50] b. 2P Enclisis
[subject = clitic(s)] verb

This indicates that a fundamental difference in HOST requirement exists between Romance clitics and 2P clitics.

Steele (1977a) reports cases in certain Uto-Aztecan languages (such as Tarahumara, Yaqui and Cora) where the two strategies appear together. That is, members of one set of clitic subject pronouns can occur BOTH in 2P and proclitic to the verb in the same clause, as in (51) and (52):

[51] (Tarahumara)
ču =mu šika ké mu=nakí muhé ko ba
WH=cl WH NEG cl =want you emphatic emphatic
'Why don't you want it?' (Steele 1977:553)

[52] kwarénta péso dyáryota=ne ne=kóba íani ínine (Yaqui)
forty peso daily =cl cl =earn now here
'Now I make forty pesos a day here.' (Steele 1977:553)

In another Uto-Aztecan language, Tepecano, the same clitic pronouns can fill both positions simultaneously:

[53] ndedos n =an=ahohoinda (Tepecano)
my:fingers introducer=cl=will:shake:them
'I will shake my fingers.' (*op. cit.*, p. 543)

According to Steele (1977), the clitic *=an=* in (53) is analyzable both as a verbal proclitic attached to *ahohoinda* and a 2P enclitic attached to *ndedos n*.

These examples show that although there might appear to be two clearly demarcated types of clitic, in fact, the distinction may not be so clear at all. Moreover, there may be an historical relationship between 2P and verbal clitics in certain languages. Indeed, Steele (1977) argues that clitics in Uto-Aztecan developed from 2P enclitics to verbal proclitics via a copying rule. Further discussion on the relationship between 2P and verbal clisis is given in later sections.

1.3.3 Cliticization and Inflectional Affixation

Although clitics impose conditions on their hosts, they do not affect the lexical category of the host as shown in (54):

[54] $_{Z}[\ _{Z}[\text{host word}]_{Z}\ \text{clitic}]_{Z}$

The structure in (54) does not necessarily represent an underlying structure. As shown in later chapters, some clitics have class membership, which means that for some host-clitic sequences, the underlying bracketing would be something like:

[55] $_{Z}[\text{host}]_{Z}\ _{X}[\text{clitic}]_{X}$

(and the mirror for proclitics of this type). Thus, (55) is a result of cliticization which attaches X subordinate to Z, with resulting loss of word status X, because of its being dominated by Z.

The structure in (54) indicates that clitics seem to be formally similar on the surface to inflectional affixes where the same obtains, as for example in (56a) and (56b):

[56] a. $_{V}[\ _{V}[\text{walk}]_{V}\ \text{-ed}]_{V}$

[56] b. $_{N}[\ _{N}[\text{dog}]_{N}\ \text{-s}]_{N}$

The crucial difference between affixes and clitics, however, is that affixes attach to roots and stems to create words, whereas clitics attach to already formed words. This is reflected in the fact that clitics are extra-inflectional, in the sense that they attach to the rightmost or leftmost side of the word. The analysis of clitics as immediate constituents of their host structures is not new. For example, Nida (1949:103) analyzes clitics as accidentally forming immediate constituents with the items with which they are phonologically bound, in contrast to other bound forms which have more restricted distribution.

1.3.4 Phonological Dependence

Like the clitic elements in Romance, 2P enclitics are phonologically dependent (in a way to be discussed shortly) on a host word. As shown by the ungrammaticality of (57b) and (58b), they can neither stand alone nor receive major stress:

[57] Q: ŋa:ndi-ŋa:ndi =wa: manabi-nji (Ngiyambaa)
redup -who+ABS=EXCLAM hunt -PAST
'who-all went hunting?'

A: a. ŋadhu 'I' (free pronoun)
b. *=dhu 'I' (bound pronoun)

[58] Q: Koho=jsi viděl? (Czech)
who =aux.cl. you saw
'who did you see?'

A: a. jeho 'him' (free or strong form)
b. *ho 'him' (bound or weak from) (George and Toman 1976)

In my examples so far the 2P clitic is ENclitic to its host, i.e. leftwards dependent, whereas a verbal clitic can be either leftwards or rightwards dependent, according to the language specific placement conventions. In Chapter IV, I argue that 2P clisis need not be logically NECESSARILY ENclisis.

1.3.5 Internal Ordering Constraints

Like Romance verbal clitics, 2P enclitics exhibit strict internal ordering constraints. Examples (59a) and (59b) based on example (29), show violations of the ordering constraints for Ngiyambaa:

[59] a. *ŋa:-nhi =dju =nu =yanbi
see-PAST=1NOM=2OBL=ADD TOPIC

b. *ŋa:-nhi =yanbi =nu: =dju
see-PAST=ADD TOPIC=2OBL=1NOM

The particular template which is violated is given in (60), where 'I', 'II', and 'III' represent the person categories:

[60] host =particle =pron =pron =pron
enclitic I II III

The internal ordering constraints typical of both the Romance type and 2P type clitics have been the topic of no small number of theoretical arguments, which are discussed in more detail in later sections. The relevant fact about such constraints is that they have been used as evidence for the claim that clitic sequences are subject

to surface structure filtering constraints (Perlmutter (1971), Tegey (1975), and others), or alternatively, that clitics are moved into preordered empty node slots (Emonds (1975), Rivas (1977), Groos (1978)). What the nature of internal ordering constraints is, like movement into 2P, remains a problem for any theory of clitics.

1.3.6 Summary

The two types of clitic referred to so far have the following properties in common: CATEGORICAL MEMBERSHIP and PHONOLOGICAL DEPENDENCE. By categorical membership is meant that clitics are in general recognizable members of a word class: such as adverb, modal, pronouns, copular, etc. From a cross-linguistic perspective, it seems that a member of any morpheme class could potentially cliticize save (lexical) verb and (lexical) noun. By phonological dependence is meant that clitics are rhythmically dependent on another word which serves as "host" and that they are unstressed. They differ with respect to properties required of their hosts: Romance type clitics must attach either proclitically or enclitically to a specified lexical item (usually) a verb, whereas 2P clitics attach enclitically to whatever appears in initial position.

1.4 Cliticization in English

English exhibits another type of cliticization distinct from verbal clisis and 2P enclisis. Except for possessive *'s*, cliticization in English is OPTIONAL and it seems to be a function of fast or casual speech. Some examples are:

[61] the King of Sweden's pancake. (possessive *s'*)

[62] Bill and Jim're nannies. (reduced copula *are*)

[63] They can't be. (contracted negative *not*)

Examples (61)–(63) illustrate again that a clitic will attach to an ENTIRE PHRASE, but that the actual phonological link is formed between the FINAL WORD in the phrase and the adjacent enclitic. That is:

[61′] [[King of Sweden] 's] [pancake]

[62′] [[Bill and Jim] 're] [nannies]

This discrepancy between PHRASAL ATTACHMENT, a syntactic hierarchical structural notion, and PHONOLOGICAL UNION, a phonologically linear notion is relevant to those clitics which can attach to a phrasal node, including those 2P clitics which can be positioned after the first constituent, as in the Ngiyambaa examples (30)–(31), repeated here:

[30] ŋadhay=ndu guya dha-yi
tasty =2NOM fish eat-PAST
'You ate a tasty fish.'

[31] ŋadhay guya=ndu dha-yi
tasty fish =2NOM eat-PAST
'You ate a tasty fish.'

Evidence for the phonological union of the clitic with its host in English comes from Voicing Assimilation of phrase final /s/ which is parallel to plural *-s* and the third person singular present tense inflection *-s*, the difference being that the latter are strictly morphological markers which attach only to WORDS, not phrases. Evidence in Ngiyambaa is from word internal phonological rules which apply only to string adjacent items.

The facts illustrated in (61)–(63) have led some grammarians (such as Nida (1946), Bloomfield (1935)) to refer to possessive *'s* as a PHRASAL SUFFIX; that is, the close phonological union between *'s* and its host word (i.e. the final word of the host as shown (61)), resembles that which holds between a root and the plural marker *-s*. Since the host, such as *King of Sweden* in (59), is obviously a PHRASE, not a root, the natural way to describe *'s* is as a phrasal suffix. More recently, however, *'s* has been described as a clitic (e.g. Matthews (1974)). Janda (1979) argues, on the basis of historical data on the development of the genitive in English, that *'s* is unequivocally a clitic particle, not an inflection. In Chapter IV, the nature of *'s* as a phrasal clitic is further discussed.

A much discussed case of cliticization in English is *to*-contraction, as in (63)–(64):

[63] Teddy is the man I want to succeed.

[64] Teddy is the man I wanna succeed.

While (63) is ambiguously interpretable as:

[63′] Teddy is the man such that I want the man to succeed.

[63″] Teddy is the man such that I want to succeed the man.

(64) can only mean (63″).

This type of disambiguation associated with cliticization is not typical of any other clitics I have found so far. What IS common is, for example, in Ngiyambaa or Finnish, where the full form is used to indicate pragmatic focus as in (65), a variant of (37)–(38) in which *ŋindu* 'you' is in focus:

[65] ŋindu ŋadhay guya dha-yi
you tasty fish eat-PAST
'You ate a tasty fish.'

Similarly, in English, there are contractions such as:

[66] a. Don't do it!
b. Do not do it!

[67] a. He'll never finish.
b. He will never finish.

The data of *to* encliticization in English (first noticed to be theoretically significant by Larry Horn, cited in Lakoff (1970)) have appeared in various theoretical arguments concerning the form of a grammar. The problems of *to*-adjunction in English will be reviewed in Chapter 3.

Words such as the article and preposition are sometimes also included in the class of clitic items in English, due to the fact that in normal speech, they are unstressed and occur in the same stress group as the head of the phrase. According to Abercrombie (1964), most enclitics in English are found when a verb is immediately followed within a foot by a pronoun of any kind, whether object as in (68), subject as in (69), or indirect object as in (70):

[68] a. stóp her
b. bréak it

[69] díd he

[70] téll him

He also gives examples such as *there* in (71) and *of* in (72):

[71] ís there

[72] píece of

Zwicky (1977) cites evidence to show that object pronouns are in some sense phonologically merged to the verb, as shown in (73):

[73] She met him. /ši mɛ́ɾm̩/ (from Zwicky 1977:5)

First, no item can appear between the verb and pronoun. Second, a phonological rule which usually applies only WORD INTERNALLY in American English, Flap Formation, has applied to (73):

[74] Flap Formation (informally stated)
$t \rightarrow ɾ \,/\, \acute{V} \_\_ V$

This rule changes a verb final /t/ to an intervocalic flap /ɾ/, and is the same process by which morpheme final /t/ is realized as /ɾ/ in (75) and (76):

[75] leit + ər → leiɾ̩ 'later'

[76] brait + əst → braiɾəst 'brightest'

and word internal /t/ is realized as /ɾ/ in (77):

[77] /bʌɾ̩/ 'butter'

Furthermore, /ən/ and /n/ cannot be uttered in isolation as can most noncliticized words in English. The following paradigm illustrating this fact is from Zwicky (1977:5):

[78] She met him. / ši mèt hɪm /
ɪm
m̩

[79] Who is it? Him. hím
ɪm
m̩

Fischer (1971) discusses the difference between proclisis and enclisis in the same string in English, as in:

[80]	I	bought	the	book	for	her.
	4	2		1		3
	/ai	bɔt	ðə	bʊk	fə	hər/
[81]	I	bought	the	book	for	her.
	4	2		3	1	4
	/ai	bɔt	ðə	bʊk	fɔr	hər/

(from Fischer 1971:22)

where she suggests that in (80) the meaning is that the taker will keep the book as a present, whereas in (81) the reading is that *for* means something like 'as a favor to' such as 'since I was going shopping'. In these examples, either a preposition may procliticize onto its pronominal object or, conversely, the pronominal object may encliticize onto the host preposition. The resulting difference in stress pattern, Fischer claims, reflects a difference in sentence meaning. Although her conclusions are doubtful, what is clear from these particular examples is that neither word—in this case a preposition and pronominal object—is obligatorily a clitic in English, and that cliticization is not independent of sentence intonation and sentence meaning.

In sum, clitics in English are of varying types, but they all (except possessive 's) share the property of being optionally phonologically dependent on an adjacent word. They are not subject to any special placement constraints like 2P and Romance verbal clitics, and they do not form a neat morphological class as do, for example, bound PRONOUNS in Romance, Ngiyambaa, etc. Rather, the class of cliticizable items in English seems to be formed on the basis of

SYLLABLE STRUCTURE and STRESS. More specifically, clitics in English tend to be MONOSYLLABIC and UNSTRESSED items which, in a certain syntactic and rhythmic configuration (the specifics of which are yet to be understood), can cliticize onto a specified stressed adjacent host word.

1.5 Metrical Clitics

The term 'metrical clitics' refers to a set of clitics and clitic-like syllables which form part of the rhythmic structure of songs and rhymes. In fact, all clitics should be properly referred to as 'metrical' because all clitics form part of the metrical structure of the word and phrase. An example of the way the term is used here is from two Australian languages in which syllables are added to the ends of words in order for a line to contain the correct number of phrases. The first example is from Diyari (Austin (1981)), and the other is from Girramay, a dialect of Dyirbal (Dixon (1980)).

In Diyari a full line of a certain style of song requires four syllables, so a word with three syllables must have a syllable added to make it fit the full line. Usually, this is accomplished by simple repetition of the final syllable as in (82) from *malṯaña* 'pinya shoes' and (83) from kapiñi 'goanna'. (In (82) and (83) the syllable /ŋɛ:/ is added automatically in songs after each disyllabic unit. It has no grammatical status.)

[82] malṯa [ŋɛ:] ñaña [ŋɛ:]
'pinya shoes'

[83] kapi [ŋɛ:] ñiñi [ŋɛ:]
'goanna'

Austin shows that in certain cases the clitic =l̪a, which signals new information, can be added to trisyllables to fulfill the quadrisyllable requirement:

[84] piŋa [ŋɛ:] li=l̪a [ŋɛ:] 'revenge party ERG=clitic'

even though piŋa-li might not be new information at all. This example shows how a clitic can be used as a metrical "filler" when an extra syllable is needed to fulfill the metrical conventions of a song-type in Diyari.

Dixon (1980:Chapter 3) in a general survey of song styles in Australian languages, mentions other methods for altering metrical structure in addition to clitic addition, such as vowel lengthening and diphthongization. Some examples are from a Girramay song describing the desecration of some sacred tribal land by a pastoral company. The song involves six phrases, each made of six syllables from one or two words:

[85] a. bungi +ŋu gumburru
lie down+REL mist+ABS

b. wudu guymayŋinbi
nose-ABS place-ABS

c. banbu marrga +mbi +ŋu
THAT loud noise+BECOME+REL

d. balŋa +balŋa +bi +ŋu
cleared+RECUP+BECOME+REL

e. naygu=rru bulu +nya
MY =TOO father's father+ACC

f. baya+li =rru ŋaja
sing+PURP=TOO I+NOM

(The'=' has been added for clarity.) Dixon's translation is roughly:

> "Mist is lying on Guymayŋinbi as the bulldozer's nose destroys the place, as it becomes cleared by the explosion of dynamite. That was my paternal grandfather's country. I had to make a song about its destruction."

In (85e) the phrase is lengthened from five to six syllables by the addition of *=rru* to *ŋaygu*. The enclitic *=rru* is an 'ubiquitous' enclitic that can be added to any word in spoken Girramay; its meaning is something like 'too'. In (85f), the sixth syllable is the same clitic *=rru*, added to the verb *bayali*. Together (85e) and (85f) are one complete sentence. It is unlikely, then, that the clitic is added for the purpose of signalling a meaning 'too', but rather is simply an extra syllable with no semantic effect; that is, it is added solely to complete the meter.

These are both examples of 'metrical clitics', that is the addition of a syllable whose existence is determined by the rhythmic

structure of the host word. In these examples the syllable is always ENclitic. With examples involving reduplication, vowel lengthening, and vowel diphthongization, the actual phonological shape of the additional syllable is determined by the phonological shape of the host. In cases where an enclitic already found in the language is used for the additional syllable, the phonological shape of the host is probably irrelevant. None of these phenomena is unique to Australian languages but is generally found in songs, nursery rhymes, poems, etc. in many languages.

In sum, so far in this chapter, I have given a brief introduction to some of the various properties, behaviors and types of clitics. A preliminary characterization of 'clitic' has been given. In general, clitics are unstressed elements which appear not to be affixes nor words. As shown throughout, certain clitic words are STRESSABLE, that is, OPTIONALLY unstressed, such as the English will/'ll is/'s, etc. In contrast, other clitics are UNSTRESSABLE in all structures, such as the Spanish object pronouns. Further discussion of STRESSABILITY viv-à-vis clitics is given in Chapter 4 and 5. The next chapter discusses the one attempt that has been made to formulate a general taxonomy of clitics, Zwicky (1976) "On Clitics," and shows some of the problems associated with this analysis. I then look at some of the theoretical problems involved in classifying clitics across languages.

Chapter 2

Typology of Clitics and Cliticization

2.1 Introduction

Matthews (1974:173) makes the following observation:

> 'enclitic' and 'proclitic' are rarely explained in the general literature.

The reason for this should, by now, be obvious.

Most attempts at describing clitics have been done as part of the analysis of a particular language. See for example, Goodwin (1894) on Greek, Sapir (1930) on Southern Paiute, Dixon (1977) on Yidiny, and many others. Recently, however, with the increasing interest in language universals (starting with Greenberg (1963)), and an increasing interest in the formal properties of basic linguistic elements, there is growing concern with arriving at LANGUAGE-INDEPENDENT STATEMENTS about basic linguistic elements. Moreover, since clitics seem to be in part syntactic units, in part morphological units, and in part phonological units, an understanding of clitics and the process of cliticization is particularly intriguing because it may give insights into the theoretical problem of distinguishing the levels of linguistic analysis and of characterizing the exact nature of the syntax-phonology interface.

In the first part of this chapter, I consider Zwicky's (1976) taxonomy of clitics, the first attempt at trying to classify clitics across languages. I then discuss some problems and inadequacies of his classificatory system. Finally, some comments on clitic typology from Nida (1946), Broselow (1976), and Steele (1977a) are discussed.

2.2 On Zwicky's Typology of Clitics

Zwicky (1977) is perhaps the first general survey which attempts to differentiate clitic types with respect to their various syntactic, morphological, and phonological properties. Zwicky distinguishes three types:

- simple clitics
- special clitics
- bound words

all of them "bound unaccented morphemes that sometimes are in construction with affixes" (p. 7). He describes these as follows.

2.2.1 Simple Clitics

Simple clitics are the result of phonological reduction of a free morpheme which becomes phonologically subordinate to a neighboring word. Zwicky's primary example is the unstressed pronoun in English, illustrated in Chapter 1, examples (78)–(79). The stressed form of a simple clitic (that is, the full form from which it is derived) is the one that can appear in isolation or under emphasis. Unlike most special clitics (see below), the reduced forms tend to occur in exactly the same syntactic position as the unreduced stressable forms. Cliticization of this sort, Zwicky notes, usually correlates with a certain style, such as casual or rapid speech.

2.2.2 Special Clitics

Special clitics show "special syntax" such as that of Spanish and French conjunct object pronouns, which appear in a distinct

surface position from non-clitic nouns and pronouns, as exemplified in Chapter 1, (7)–(8). They cannot appear under emphasis, as exemplified in (5)–(6) in Chapter 1. In addition, Zwicky notes that French conjunct pronouns behave like affixes with respect to rule immunity:

[1] Je connais Jean et je crains Jean.
'I know John and I fear John.'

[2] Je connais et crains Jean.
'I know and fear John.'

but:

[3] Je le connais et je le crains.
'I know him and I fear him.'

[4] *Je le connais et crains. (Zwicky 1977:5)

Examples (1)–(4) show that, like affixes, French object clitics cannot be deleted under identity. French subject clitics do not obey this constraint, as shown in (2).

Special clitics often have related free forms. So the French conjunct pronouns *me* /mə/ 'me' and *le* /lə/ 'him' correspond respectively to the disjunct *moi* /mwa/ and *lui* /lɥi/, and the Serbo-Croatian enclitic pronouns *im* 'to them' and *ti* 'to you (sg.)', correspond respectively to the full pronouns *njima* and *tebi* (Zwicky (1976:3–4)). The morphophonemic relation between 'special clitics' and their related free forms tends to be peculiar and remote (Zwicky (1976:29)).

2.2.3 Bound Words

Bound words are always bound but "show considerable syntactic freedom in the sense that they can be associated with words of a variety of morphosyntactic categories" (Zwicky (1977:6)). These clitics seem to be semantically and syntactically associated with an entire phrase or an entire sentence, but are phonologically bound to one word of the constituent. Zwicky's examples include the English possessive *'s* and the 2P enclitics of Tagalog, as in (26) and (31) in Chapter 1, and the Latin conjunction *-que*, as in:

[5] duās=que ibi legiōnes cōnscrībit.
two =and there legions (he) enrolls.
'and (he) enrolls two legions there.'
(*De Bello Gallico*, cited by Hale and Buck (1966), in Zwicky (1977:6))

Zwicky then looks at various general properties of clitics, internal ordering constraints, rule immunity (phonological and syntactic), external ordering constraints (the relationship between clitics and their hosts), etc. My summarization of Zwicky's criteria for classifying clitics is given in Figure 2.1.

The explanation of Figure 2.1 is:

- By PHONOLOGICAL is meant that the group is subject to word internal phonological rules.
- By MORPHOLOGICAL is meant "bound."
- By SYNTACTIC is meant that the clitic is referred to by at least one putatively syntactic rule.
- By SEMANTIC is meant that the clitic is semantically associated with its host.
- By STYLISTIC is meant that cliticization seems to be conditioned by stylistic factors.

Zwicky himself realized some of the problems inherent in attempting to divide all clitics from such typologically distinct languages into three discrete types:

> Although the line between the two types of clitics is not always clear, it is useful to have separate terms for the two cases. (Zwicky 1977:6)

(referring to special and simple clitics). However, it is doubtful just how "useful" his divisions really are. The next section suggests that Zwicky's typology fails to provide a framework in which to characterize historical change, to capture similarities between certain clitics or to characterize the differences between others.

Figure 2.1: Typology of Clitics – Zwicky 1976

	clitic type		
	simple clitics	special clitics	bound words
criterion			
phonological	+	+	+
morphological	+	+	+
syntactic	-	+	unspecified
semantic	-	-	+
stylistic	+	-	-

2.3 Problems with Zwicky's Typology

2.3.1 *Historical Change and Cliticization: "Underlying" Clitics*

Zwicky claims that his typology gives insight into historical change. The particular process he claims to illuminate is the putative reanalysis of independent words as clitics and then eventually, as derivational or inflectional affixes. That is:

[6] Zwicky's model of clitics in historical change

word ⟶ clitic ⟶ affix

He claims that

[7] "special clitics are often the remnants of an earlier system of simple clitics" (Zwicky 1977:6)

meaning that something like the following chart may be a more accurate representation of his concept of clitic development than that given in (6):

[8] Zwicky's Model Modified

word ⟶ simple clitic ⟶ special clitic ⟶ affix

(8) indicates that a minimal syntactic unit (word) becomes part of the morphology of a language (affix) by the pressure of what is essentially phonological reduction (cliticization).

The type of data which probably motivated the model in (8) is found in certain Australian languages which provide some evidence of an intermediate stage in their pronominal systems. Wurm (1967) outlines different Australian language types on the basis of their pronominal systems: free pronouns, enclitic pronouns, and agreement markers. He classifies languages and language families according to pronominalization types, and discusses the historical relationship between these language families. Capell (1967) also suggests that pronominalization may correspond to historical development, but he does not develop the point as fully as Wurm (1967).

Hale (1973:340) suggests the following analysis for Walbiri:

> I think it is reasonable to propose that the source of pronominal clitics in Walbiri is in fact independent pronouns which, at some stage in the prehistory of the language, became unstressed and were attracted into clitic position (that is, second position) in accordance with a principle of clitic placement which is extremely widespread among languages of the world. The process of destressing and cliticizing pronouns eventually became an obligatory rule and, subsequently, independent pronouns were re-created from other sources available to the language, such as oblique forms of pronouns like those found in possessives or in other functions not normally subject to cliticization ...

He substantiates this claim with data from Warramunga, which he says represents synchronically the initial phase. Warramunga clitic pronouns are merely unstressed variants of independent pronouns (in Zwicky's terms, simple clitics) but have moved into "second position," after the first (non-pronominal) constituent of the sentence. The next step is the obligatory reduction of the unstressed variant of the free form which is in second place (i.e. the simple clitic) into the clitic form (special clitic) which can then lean on the initial word host. The claim is, then, that Hale's data shows an uncontroversial drift:

[9]	free pronoun	>	simple clitic in 2P (i.e. optional)	>	special clitic in 2P (i.e. obligatory)

which illustrates the usefulness of the simple vs. special distinction.

Unfortunately, the claim in (6) is a weak one. If it is reformulated in a stronger form as:

[10] "clitics are an obligatory intermediate step from word to affix"

then it at least becomes testable, but untrue. A counterexample would be the Spanish future and conditional suffixes, derived respectively from the present and imperfect indicative of the verb *haber*.

[11] infinitive aux → infinitive - suffix

as in:

	Old Spanish (to XVII)			Modern Spanish
[12]	dar	has	>	dar -ás
	to-give	you-will		give-2 sg. FUT
[13]	cantar	híades	>	cantar-ías
	to-sing	3-sg.COND		sing -3 sg. COND

In this particular example, there is certainly no evidence of an intermediate stage between word and affix, when the auxiliary was at an intermediate clitic stage. At the same time, nor is there evidence against the claim that a clitic stage intervened between word and affix. The claim in (10) is itself impossible to test and hence vacuous.

2.3.2 *Historical Change and Romance Word Order*

Zwicky further illustrates the usefulness of the special vs. simple distinction in historical syntax by referring to Givón (1971) who argued that the ordering of (special) clitic pronouns in Modern French and Spanish reflects the OV order of earlier Romance and of Latin:

> From the historical point of view, it should not be surprising that there is difficulty in drawing the line between simple and special clitics, since special clitics are often the remnants of an earlier system of simple clitics; this point is made by Givón (1971:396–7) with respect to the clitic pronouns of modern French and Spanish, the ordering of which can be taken to reflect the object-before-verb order of earlier Romance. (Zwicky 1977:6)

The choice of Spanish object pronouns as an example is unfortunate because Givón's claim is thoroughly false. Green (1976) has shown that the choice of "SOV" word order for Spanish constructions in which a verb has a clitic pronoun object is unrelated to any historically antecedent WORD ORDER PREFERENCE, but is due to other facts internal to Spanish. Therefore, the changes from Medieval to Modern Spanish seem to have occurred quite independent of any preferred Latinate word order:

> The following conclusions may be drawn. On the one hand the presence in all major Romance languages (including Rumanian) of tonic v. atonic pronouns and of clitic arrays (deriving historically from atonic pronouns) to the left of the finite verb and to the right of the positive imperative, argues for projecting the source of this development back into Proto-Romance. Against this, we should recognize a) that the different languages trace some of their clitics back to different etyma (*leur/loro/lor* : *les/lhes*), b) that clitics have differing orders relative to one another: (*glielo da* : *le lui donne*) and to the verb (*am văzut-o* : *je l'ai vue*), c) that for movement purposes some languages treat clitic strings as one indivisible constituent while others require mirror-image rules (*tu me la donne - donne la moi* : *me la das - dámela*), and d), most importantly, that pronoun objects in classical and late Latin were potentially stressed, were not bound to the verb, and were not fixed in position. Adding to this the evidence that modern Spanish clitic order was not securely established until the C16th—long after SOV had ceased to be an acceptable surface order for full NP's—we must

> surely conclude that *the general fact of Latin's being an SOV language has no direct bearing whatsoever on this apparently anomalous OV order in present-day usage.* (Green 1976:14; my emphasis)

Moreover, the assumption that the clitic-verb ordering is equivalent to OV is in itself tenuous because the nominal status of clitics is dubious (see Rivas (1977), Jaeggli (1978)). Thus, Zwicky's intent to utilize the historical nature of his special vs. simple distinction in shedding light on the problem of word order of clitics in Modern Spanish as related to Latin word order has no factual basis.

2.3.3 2P Clitics: Special Clitics or Bound Words?

Zwicky introduces the category 'bound word' as the third 'clitic' type (Section 2.2), and among his examples are Tagalog 2P enclitic particles. From what I can gather, what Zwicky is calling 'bound words' in Tagalog are almost identical to the 'special clitics' in Walbiri. The difference in his examples is that Walbiri 2P enclitic PRONOUNS are classed as SPECIAL CLITICS, but Tagalog 2P enclitic PARTICLES ARE BOUND WORDS:

[14] Zwicky's Treatment of 2P Enclitics

SPECIAL CLITICS:	2P pronouns in Walbiri
BOUND WORDS:	2P particles in Tagalog

My guess is that this may be due to the fact that the clitic pronouns in Walbiri have stressed non-clitic variants and are obligatory, whereas the particles do not, but Zwicky does not specify.

In both languages, there are pronominal and particle clitics which occur in 2P—essentially enclitic on the initial constituent or word depending on the language (see Chapter 1). Since the word order in both languages is relatively free, the enclitic need not be semantically or syntactically associated with its host word. These properties are exemplified below:

[15] kula -ka =ṇa wawiri pura-mi (Hale 1973:312)
negative-present=I kangaroo cook-nonpast
'I am not cooking the kangaroo.'

In (15) the clitic =ṇa 'I' occurs enclitic to the negative *kula*. The negative refers to the verb 'cooking', as shown in the gloss. In this case, the negative and the attached clitic =ṇa 'I' are not semantically related, i.e. not 'not-I' but 'not-cooking (kangaroo)'.

Unlike the first problem I discussed of Spanish clitic-verb (OV) order, which simply has no relevance to the typology, the problem here is that the typology is so weak that it doesn't clearly indicate which category 2P clitics belong to. Enclitics in Tagalog, Zwicky claims are BOUND WORDS whereas enclitics in Walbiri are SPECIAL CLITICS with no justification given for the choice of one or the other category. Therefore, the typology assigns almost identical clitic types to two different categories, obscuring the similarities between the highly parallel 2P clitic systems of Tagalog and Walbiri.

Since the purpose of language typology is to group similar systems under the same classificatory category, on the grounds of classificatory adequacy, the special vs. simple (vs. bound word) distinction must be discarded as inadequate. If, however, Zwicky is claiming that PRONOUN clitics should be treated as a different clitic type from PARTICLE clitics, then there is no account of the fact that they all gather in 2P.

2.3.4 *The Problem of Clitics and Syntactic Rules*

The assumed MAJOR difference between simple and special clitics is SYNTACTIC, that is that the latter often show "special syntax." Zwicky's example is from French:

> conjunct clitics often show special syntax: in French declarative sentences, conjunct object pronouns are obligatorily placed before the verb, despite the fact that French declarative word order is SVO, objects ordinarily coming after the verb:
>
> | | | | |
> |---|---|---|---|
> | (i) | je vois Jean | [žvwa žã] | 'I see John' |
> | (ii) | *je Jean vois | | " |
> | (iii) | je le vois | [žləvwa] | 'I see him' |
> | (iv) | *le vois le/lui | | " |
>
> (Zwicky 1976:4–5)

For Zwicky's statement to be valid, clitic placement must be a SYNTACTIC rule. This is debatable, for reasons given below.

For example, it has been argued by Stump (1979) that clitic pronouns in French are actually verb features which are "spelled out" as are other morphophonemic verbal features. Under his analysis, there is no syntactic movement at all, no syntactic placement procedure, no syntactic deletion or insertion. In a similar argument for Spanish, Groos (1978) claims that Spanish clitics are verbal features, but her analysis incorporates aspects of Emonds' (1976) empty nodes hypothesis. Groos claims that clitics are inflectional in nature but still subject to syntactic operations.

Although the majority of proposals assume that Clitic Placement is syntactic (see Chapter 3), the issue is not clear-cut. Given this gap in understanding of what is syntactic and what is morphological *vis-à-vis* pronominal clitics, the distinction between simple and special as related to "special SYNTAX" is of limited use.

2.3.5 *More on 'Bound Words'*

A further criticism of Zwicky's typology concerns the defining characteristics of "bound words," which are:

> cases where a morpheme that is always bound and always unaccented shows considerable syntactic freedom, in the sense that it can be associated with words of a variety of morphosyntactic categories. Frequently, such a *bound word* is semantically associated with an entire constituent while being phonologically attached to one word of the constituent, and ordinarily the bound word is located at the very margins of the word, standing outside even inflectional affixes. Examples of bound words are the Latin particle *-que* 'and', the Tagalog particles, and the English possessive morpheme. (Zwicky 1977:6)

While morphemes like the English possessive *'s* are problematical, Zwicky's distinction is weak on the following grounds: there are many optionally bound morphemes which fulfill his criteria. One example is copula contraction in English, where the reduced form of the copula can attach to any of a number of word class types:

[16] My motorcycle's broken. (noun + copula)

[17] It's broken. (pronoun + copula)

[18] The motorcycle I looked at's broken. (preposition + copula)

[19] The motorcycle I bought's broken. (verb + copula)

And in each case the copula is "weakly connected" both semantically and syntactically. However, for Zwicky, such contractions in English are SIMPLE CLITICS, while at the same time they seem to have more in common with 'bound words'. Once again, the division into BOUND WORD and SIMPLE CLITIC seems to obscure similarities between bound morphemes.

2.3.6 *The Definition of 'Simple Clitic'*

Because the definition of 'simple clitic' is so vague, it is unclear what constitutes examples. Take Classical Greek proclitics: they seem to be SIMPLE CLITICS in that they are accentually dependent versions of words which can themselves appear with accent in certain configurations, namely in phrase or sentence final position:

[20] ek Spártes
'from Sparta'

[21] kakôn ék
bad (men) out-of
'out of bad men' (poetic)

[22] ouk ékhei
neg he-has
'he has not'

[23] pôs gàr oú
'for how not? (obviously)'

In (20) the preposition *ek* 'from' is in its normal proclitic position, whereas in (21) *ék* appears phrase finally, and thus is accented. Similarly (22) and (23) with the negative *ou(k)*.

Proclitics in Greek can also be accented if directly followed by an enclitic, as in:

[24] eí =tines
proclitic=enclitic
'if any people (plural, masc. or fem.)'

where the normally proclitic *ei* 'if' appears accented, because it is followed by the enclitic *tines* 'any people (pl./m. or f./indef. pronoun)'.

According to the definition of simple clitics as "cases where a free morpheme, when unaccented, may be phonologically reduced, the resultant form being phonologically subordinated to a neighboring word," Greek proclitics are SIMPLE CLITICS. However, according to the definition of special clitics as "cases where an unaccented bound form acts as a variant of a stressed free form with the same cognitive meaning and with similar phonological makeup," they are SPECIAL CLITICS. This again shows the inadequacy of these two allegedly distinct categories.

2.3.7 *The Status of 'Clitic'*

A final criticism of Zwicky (1977) is that it is assumed throughout that clitics are a SEPARATE UNDERLYING (MORPHOLOGICAL) CATEGORY on a par with words and affixes. It is this implication of its independent status that is questionable. Related to this is the fact that no mention is made in Zwicky (1977) of the LEVEL at which a particular unit is to be considered a word, affix, or clitic.

To sum up, this section has shown how the typology of clitics in Zwicky (1977) is inadequate in several ways because it makes unclear and poorly drawn distinctions between clitic types.

2.4 Other Typologies

2.4.1 *Nida (1946) on Alternate Free Forms*

Nida (1946:155) defines clitics as:

> elements that (1) combine phonologically with words with which they do not form morphological constructions, and (2) do not constitute derivational or inflectional formatives.

He then delimits two types of clitic:

> There are structurally two basic types of clitics: (1) those that have alternate free forms and (2) those that do not have such forms.

His examples of clitics of the first type are English reduced and bound alternatives of *is*, *are*, *have*, etc., as well as pronouns such as *you* in *did you go?* /'dijə'go^{w}/. Examples of the second type are Maya demonstratives or 'identificational enclitics' which correspond functionally to postposed identificational phrases and clauses. The difference is that enclitics are always phonologically bound to the preceding words whereas the other set always consist of free forms.

In Zwicky's terminology, Nida's first type of clitic corresponds roughly to 'simple clitics' because they are PHONOLOGICALLY parallel to full forms. The clitical feature of Nida's second type of clitic is that they are FUNCTIONALLY parallel to full forms. Therefore, both types might have related full forms, but the first cliticizes without movement, whereas the second may appear moved. This same distinction is found in Broselow (1976).

2.4.2 *Broselow (1976) on Clitic Movement*

Another attempt to view clisis typologically is that reported in Broselow (1976). Broselow justifies ordering the Dative Movement transformation in Egyptian Cairene Arabic (ECA) between two cliticization rules by separating cliticizing languages into the following two types:

> It has been noticed that languages which permit cliticization processes seem to fall into two categories. There are those, like French, which permit the movement of clitics over intervening elements, as in *Elle n'aime pas Paul* →*Elle ne l'aime pas.* Languages of the second sort, however, allow cliticization only onto adjacent elements, as in English *I have gone* →*I've gone*, *I did not* →*I didn't.* All the examples of ECA cliticization rules thus far presented fall into the second category; in each case lexical elements corresponding to clitics are generated next to the element to which the clitics are attached. (Broselow 1976:91)

Broselow's data support the distinction of two types of languages, those which permit only cliticization onto adjacent elements, and those which combine movement and cliticization.

2.4.3 *Steele (1977a): Clitic Pronouns*

Steele (1977a) makes some tentative remarks comparing two analyses of the relationship between clitic pronouns and independent pronouns:

> A first hypothesis might be that clitic pronouns are the synchronic reductions of otherwise free independent forms. English clitic pronouns seem to be exactly that ... Spanish and French clitic pronouns have been analyzed to be the result of a synchronic rule which moves the independent pronouns into clitic position (and changes their form) ... English clitic pronouns differ from Spanish and French clitic pronouns in that reduction in the latter requires a different position. (Steele 1977a:545–6)

Steele continues by adding that this typology needs more study, but if if is correct, then CO-OCCURRENCE can be used as a diagnostic of synchronic relationships between clitic pronouns and independent pronouns:

> If clitic pronouns are the synchronic reduction of independent pronouns, we would not expect the two to co-occur.

Again, the critical distinguishing features are movement and alternate free forms.

Each of these typological observations are riddled with the same problems as Zwicky's distinctions: the assumption that clitics migrate by syntactic rules, that clitics are thereby derived from their corresponding full forms, and that clitic creation and clitic attachment are one and the same process. Further comment on these analyses is given in the next two chapters.

Chapter 3

Analyses of Cliticization: Review and Problems

The previous chapter discussed some of the problems of classifying clitics. This chapter concerns problems of analyzing clitics. Cliticization has been analyzed in various ways: as a strictly syntactic phenomenon, as a post-syntactic/pre-phonological process, as part of the morphological component of the grammar, and as a strictly phonological process. Here I review different proposals with the aim of clarifying the types of problems clitics cause in syntactic and phonological theory. Among the analyses considered are: Copying, Migration, Base-Generation, Subcategorization Features, Readjustment Rules, Phonological Boundary Reduction, and Metrical Restructuring. This chapter shows that the only potentially viable analysis is copying, and makes some comments on the requirements of an adequate copying analysis.

Terminological inconsistency abounds in the literature on cliticization. For example, Pullum (1976) refers to the ADJUNCTION of a clitic to its host as CLITICIZATION, and Kaisse (1979) refers to REDUCTION of words to clitics as CLITICIZATION. McConvell (n.d.) calls CLITIC ATTACHMENT a "transformational rule which copies bundles of features from an NP or NP's in a simple sentence

into another position in the same sentence." Hale (1973) calls the same operation AGREEMENT. At the same time, for Hale (1973), CONSTITUENT COPYING means that pronominal clitics and determiners are alternants of one another. This is the opposite of how I use the term COPYING but the same as my MIGRATION. Hale (1973) contrasts CONSTITUENT COPYING (i.e. MIGRATION) with FEATURE COPYING (i.e. COPYING). Kayne (1975) uses a cover term CLITIC PLACEMENT for a rule which involves CREATION, MIGRATION, and ATTACHMENT, in contrast to Tegey (1975) who formulates a Transformational Rule, CLITIC PLACEMENT, to situate the clitics in the S, but not to attach them.

In this chapter the following terms are used:

1. CLITIC COPYING—refers to analyses which view clitics as forms distinct from, but corresponding to and usually derived from, certain 'basic' NON-CLITIC forms.

2. CLITIC MIGRATION—refers to analyses which view clitics as moved non-clitic forms. A migrated element simply BECOMES the clitic.

3. CLITIC ADJUNCTION—refers to the way a clitic attaches to a host.

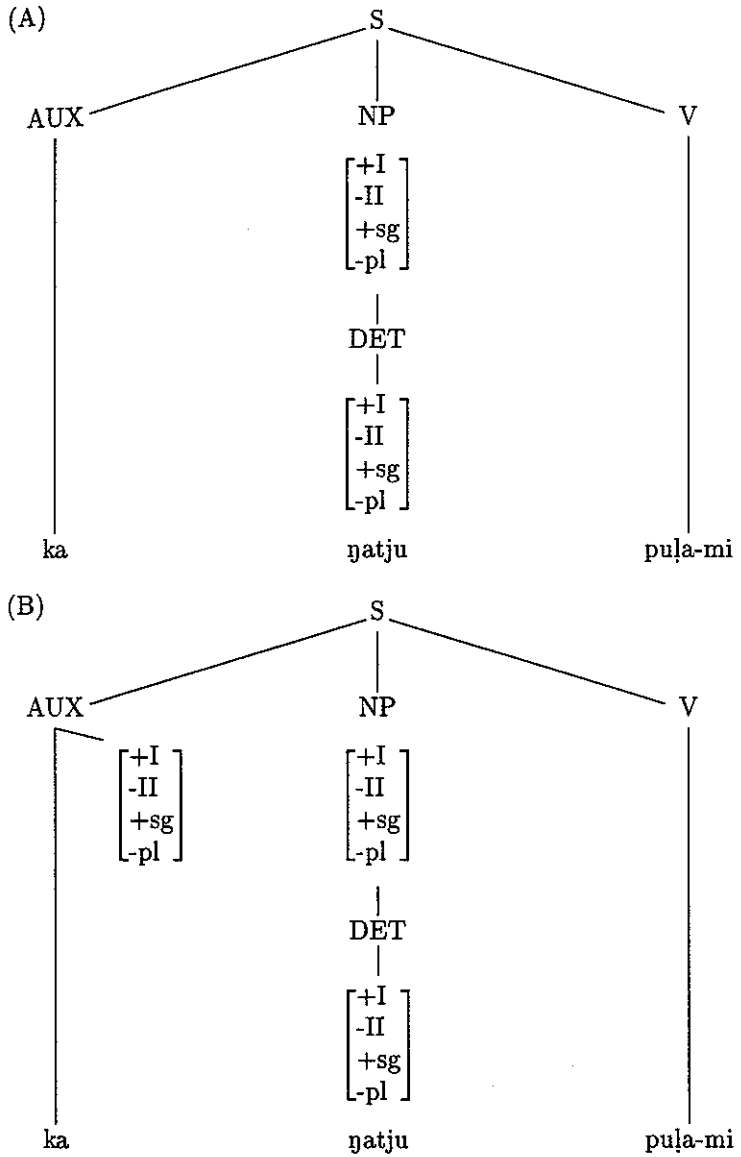
The first two analyses are defined independently of the host word, whereas the third crucially involves the host.

To illustrate various analyses of cliticization, the major part of this Chapter is limited to pronominal cliticization with occasional discussion of non-pronominals. This allows a clearer comparison between languages because much of the work on cliticization has centered on pronominal cliticization.

3.1 Clitic Copying

Typical of copying analyses is Hale's (1973) analysis of Walbiri. A feature copying rule takes a structure like (A) in Figure 3.1 and creates (B) (from Hale 1973:323–24). The derivation in Figure 3.1 shows how features are taken from the determiner node, which is dominated by NP, to 'create' the clitic, ultimately spelled out as /-ṇa/.

Figure 3.1: Cliticization as Feature Copying



A similar analysis is advanced by McConvell (n.d.) for the Eastern Ngumbin Languages. He proposes a transformation, similar to Hale's, which copies bundles of features directly from an NP or NPs into another position in the same sentence. For Hale, the DETERMINERS under an NP are the sources from which the clitic features are chosen; for McConvell, it is the whole NP.

Another analysis using NPs as clitic source is Hadlich (1971). He proposes two (optional) transformations called THE CONJUNCTIVE DO PRONOUN RULE and THE CONJUNCTIVE IO PRONOUN RULE which apply in that order and add a [+pro] segment to the front of a verb. The conjunctive DO pronoun rule is given in (1):

[1] Conjunctive DO Pronoun

SD: NP X [+V] Y [+N, αmasc, βpl, ±emph, γI, δII, εpolite, ζfem, ηrefl] Z

1 2 3 4 5 6

Condition: 4 5 = DO

SC: 1 2 3 4 5 6 → 1 [+pro, αmasc, βpl, γI, δII, εpolite, ζfem, ηrefl] 2 3 4 5 6

The IO pronoun rule is identical, except for the condition that 5 be dominated by IO Despite their similarity, Hadlich argues against collapsing the two rules.

[2] Conjunctive IO Pronoun

SD: NP X [+V] Y [+N, αpl, ±emph, βI, γII, δpolite, εrefl] Z

1 2 3 4 5 6

Condition: 5 is dominated by IO

SC: 1 2 3 4 5 6 → 1 [+pro, αpl, βI, γII, δpolite, εrefl] 2 3 4 5 6

Operating in conjunction with the copying rules is an optional rule of [+pro] deletion, which is sensitive to a feature [emph]:

[3] [+pro] Deletion

[+pro] → ∅ (Hadlich 1971:63)

Perlmutter (1971) has suggested that the presence or absence of (3) correlates with a general typological difference among languages according to whether they allow the existence of clauses with no overt subject.[1]

His generalization is:

[4] Any sentence other than an Imperative in which there is an S that does not contain a subject in surface structure is ungrammatical. (Perlmutter 1971:100)

Perlmutter notes that languages with (4), those he called Type A languages, are few. His examples are English, French, and German. On the other hand, languages without (4), Type B languages, abound. He cites Latin, Spanish, Italian, Arabic, Walbiri, Hebrew, Hausa, and Basque. Haiman (1974:90) adds a few other languages to the Type A list, and many others to the Type B set.

Hadlich exemplifies his analysis of clitic pronouns in Spanish with the following sentences, indicating which rules have applied and in what order:

[5]	Example	Rules
	Carlos escribió una carta a María.	none
	La carta la escribió Carlos a María.	conj DO pron (and subj-obj switch)
	Carlos le escribió la carta a María.	conj IO pron
	Carlos le escribió la carta.	conj IO pron, [+pro] del
	Carlos la escribió a María.	conj DO pron
	Carlos se la escribió a María.	conj DO pron, conj IO pron, IO replacement (= spurious *se*), [+pro] del (once)
	Carlos se la escribió.	" and [pro] del twice

Note that Hadlich's [+pro] deletion has the power to delete full NPs, but this is probably a simple error in the text. Note also that, whereas Hale (1971) proposes obligatory COPYING without DELETION for Walbiri, Hadlich (1971) proposes optional COPYING with optional DELETION for Spanish.

The derivation in (5) illustrates a Rule Ordering solution to the problem of surface constraints on clitic order. That is, as shown in (5), Hadlich requires extrinsic ordering of CONJUNCTIVE IO PRON and CONJUNCTIVE DO PRON to generate S's like (6) but not (7):

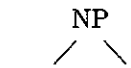
[6] Carlos me la escribió. 'Carlos wrote me it.'

[7] *Carlos la me escribió.

Perlmutter (1971) argues against such Rule Ordering solutions. Instead he proposes a Surface Structure Constraint (SSC) (or filter), thus eliminating the need for extrinsic rule ordering and capturing the surface-like nature of clitic ordering constraints. (See Zwicky and Pullum for further discussion of the exact location of clitic ordering constraints in the grammar.)

All the analyses mentioned so far involve the creation of a clitic as the result of a copying operation, but there are conflicting opinions as to what node—NP, Pronoun, or Determiner—is the correct

source for the clitic copy. There are examples from Spanish which suggest that NPs, and not DETs as argued in Hale (1973) serve as source for the copy. For instance,



[8] Nos dió el libro a Juan y yo.
I-pl gave the book to us, Juan and me.

where the clitic copy is first person plural, based on the entire NP *Juan y yo* and has not taken its features from either of the individual components of the indirect object NP. This phenomenon resembles problems raised by Agreement, where similar facts obtain, as seen in (9)–(11):

[9] Juan y yo estamos en Nueva York.
'John and I are (1st pl) in New York.'

[10] *Juan y yo estoy en Nueva York.
am (1st sing)

[11] *Juan y yo está en Nueva York.
is (IIIrd sing)

The verb in (9) agrees with the plural subject NP, which consists of conjoined singular nouns. Hale (1973) discusses essentially this problem for conjoined NPs in both Walbiri and Warramunga:

> ... where the subject or object is a conjoined expression, the corresponding pronominal element appearing in clitic position must embody the feature of number and person appropriate to the expression as a whole ... Where a conjoined expression includes both a pronoun and a noun, the pronoun ... embodies the number of the noun phrase as a whole, and it is this composite pronoun which cliticizes ... Where only nouns are present in, say, a conjoined subject noun phrase, a pronoun embodying the number of the whole appears in clitic position.
>
> (p. 342)

This suggests that both agreement rules and clitic feature copying rules observe a similar principle stating that the top node in a conjoined expression determines the feature composition of copied nodes. Observations such as these form the basis for feature analyses of cliticization (among them Harris (1978), Groos (1978), Stump (1979), Chomsky (1980)) discussed in later sections.

3.2 Clitic Migration

Analyses of cliticization by Migration are probably the most common. See Broselow (1976), Kayne (1975), Aissen (1974), Bordelois (1974), Quicoli (1975, 1976), Kaisse (1980a). Among the assumed (but see below) motivations for a Migration analysis are the following:

(a) Clitic pronouns are (partly) morphophonologically identical to independent pronouns.

(b) Both clitic and full nominals representing the same role (e.g. Subject, DO, IO etc.) do not (usually) cooccur in a given sentence.

(c) Subcategorization restrictions are satisfied equivalently by NPs, pronouns, and clitic pronouns.

(d) There is a correspondence in meaning between full pronouns and their clitic counterparts.

The best known Migration analysis is perhaps that of Kayne 1975, who writes:

> Assume that pronouns can occur freely under the node NP. This assumption is independently necessary to generate sentences containing the strong forms of the pronouns ... Let us further assume that there is a transformation called Clitic Placement (Cl-Pl) that moves direct and indirect object pronouns to preverbal position under certain conditions. (Kayne 1975:74)

The rule he gives is:

[12]

W	NP	V	X	Pro	Y						
1	2	3	4	5	6	→	1	2	5+3	4	6

where W, X, Y are variables, and Pro is either "+dative" or "+accusative" (Kayne 1975:201)

Then, a sentence like (13) in French is derived from the structure underlying, (14):

[13] Marie nous connait. 'Mary knows us."

[14] *Marie connait nous.

Kayne argues against base-generating clitics in their surface positions because this provides no explanatory way of capturing facts of subcategorization such as the fact that direct object clitics can only cooccur with verbs that take direct object NPs, etc. He gives examples (1975:70–71) such as (15) and (16):

[15] a. Jean est fidèle à ses parents.
'Jean is faithful to his parents.'

b. Jean restera fidèle à ses parents.
'Jean will remain faithful to his parents.'

[16] a. Jean leur est fidèle.
'Jean is faithful to them.'

b. Jean leur restera fidèle.
'Jean will remain faithful to them.'

Where the surface structure clitic (*leur*) corresponds to the deep structure indirect object (dative) complement of the adjective *fidèle*. If *fidèle* in (16) is replaced by an adjective that does not take a dative complement, the result is ungrammatical:

[17] a. *Jean leur est originaire.
b. *Jean leur restera originaire.
'Jean is a native of them.'

He further observes that neither *être* nor *rester* can be preceded by a dative clitic if followed by a place adverbial rather than by an adjective:

[18] a. *Jean leur est à Paris.
'Jean is in Paris to them.'
b. *Jean leur restera à Paris.

On the basis of such data, Kayne argues that the clitics of (17) could not be generated by PS rules, but that such co-occurrence restrictions are easily captured in a description which transformationally derives clitics from pronouns introduced in NP positions.

Kayne gives similar arguments from cases in which a clitic corresponds to a complement formed by transformation. An example is (19), where the dative complement is derived transformationally from the underlying subject of the sentence embedded under *faire*, and appears as a clitic when it is a pronoun, as in (20):

[19] Je ferai lire ce livre à Jean.
'I'll have Jean read this book.'

[20] Je lui ferai lire ce livre.

Kayne argues that such examples show that there is no general way to determine in the base the surface co-occurrence restrictions between verbs and clitics. (See further discussion below on base-generation.)

It is instructive to consider Kayne's rule (12) with a different but comparable rule for pronominal cliticization: the cliticization rule for Egyptian Cairene Arabic (ECA) formulated in Broselow (1976:84), and given in (21) below, with Kayne's formulation repeated for comparison:

[14] (Kayne 1975)

W	NP	V	X	Pro	Y						
1	2	3	4	5	6	→	1	2	5+3	4	6

where W, X, Y are variables, and Pro is either "+dative" or "+accusative"

[21] Pronoun Encliticization (PRO ENC) (Broselow 1976)

X	PRO	Y_{XP}
1	2	3 →
1#2		3

Rule (21) gives the derived structures:

[22] $[X_{verb}$ # PRO$]_{verb}$

[23] $[X_{prep}$ # PRO$]_{prep}$

The variable XP in (21) is to be read as any phrasal node whose head is X; in (22) XP was VP and in (23), XP was PrepP.

Although the two rules (12) and (21) differ in some respects, they are both syntactic (transformational) rules which perform a similar function. For French, there is movement and sister adjunction; for ECA there is no movement and Chomsky adjunction. (12) and (21) are comparable syntactic ways of handling the same phenomenon, namely the adjunction of a PRO to its host. Rule (12) allows unbounded movement across the variable 'X' whereas (21) requires adjacency of Pro and 'X'. Thus, (21) is not movement in any literal sense, but is more correctly viewed as structural readjustment. The claim common to both Kayne (1975) and Broselow (1976) is that Pronoun Cliticization is a syntactic phenomenon, and that a transformational rule is necessary to explain the adjunction of clitic(s) to host(s).

The examples given so far have been of pronominal clitics. The copying vs. migration debate is more opaque (and thus more interesting) for pronominals than for non-pronominals because of the parallels between clitic pronouns and non-clitic pronouns/NPs. The debate is less controversial for non-pronominals because often non-pronominal clitics, such as particles, negatives, conjunctions, have only one occurrence in a sentence, and often have no clear non-clitic alternant (although there may be historically related non-clitic variants). Most commonly, non-pronominals are analyzed as base-inserted in a given position and then moved by transformational rule to any of a number of potential host sites. Examples of this type of analysis are Karttunen (1975a) for the enclitic Finnish focus marker *-kin/-kaan*, Horn (1978, from Smyth (1920)) for the negative proclitic *ou(k)* in Classical Greek, and Kaufman (1974) for Navajo spatial enclitics.

To exemplify, consider the analysis of Kaufman (1974), who argues that certain spatial enclitics such as *=góó* 'to' in (24) cannot have originated where they appear in the surface string:

[24] Jáan díínáál bi'doo'niidí=góósh nił bééhózin
John 2.F.go 3.3pl. tellCOMP=toQ with 3.know
'Do you know where John was told to go (to)?'

(I have added 'to' in the gloss of 'go (to)' for clarity.) In (24) the enclitic is logically associated with the verb in the lowest clause *díínáá*ɬ 'go' but occurs attached to the next higher verb *bi'doo'niidí* '3.3pl.tellCOMP'. Kaufman (1974:519) shows that *bi'doo'niid* does not normally co-occur with the enclitic *=góó*, so that (24) is clearly a case of rightward enclitic movement.

Kaufman (1974:520) tentatively formulates an Enclitic Raising rule:

[25] Enclitic Raising

W	-	[	Δ	E	]$_{EP}$	-	X	-	í	-	Y	
1		2	3				4		5		6	→
1		2	0				4		5+3		6	

Condition: X does not contain any occurrence of the complementizer /í/.

where EP = Enclitic Phrase. She argues that the clitic is sister-adjoined directly onto verbs with an *í* complementizer. Her evidence against Chomsky-adjunction is that there is no pause between a comp /í/ and an enclitic, which would be predicted if the enclitic were Chomsky-adjoined.

The mirror image of Navajo rightwards movement can be found in the leftward pronominal movement typical of many Romance languages. Examples of Clitic Promotion were given in Chapter 1, such as:

[26] a. Quisiera poder cantártelo.
b. Quisiera podertelo cantar.
c. Te lo quisiera poder cantar.
'I would like to be able to sing you it.'

Clitics do co-occur with corresponding strong forms, but only in dislocated structures (indicated by the 'comma' in (27) for pause):

[27] a. Quisiera poder cantártelo, esto, a tí.
b. Quisiera podertelo cantar, esto, a tí.
c. Te lo quisiera poder cantar, esto, a tí.
'I would like to be able to sing you it, this, to you.'

except in certain dative constructions in which a copy of the clitic is allowed, without dislocation.

[28] a. Quiero verle a ella todos los días.
b. Le quiero ver a ella todos los días.
'I want to see her every day.'

The so-called 'double-object construction' (Roldán (1971)) is not very well understood. However, given the presence of a clitic in the lower clause, with a higher verb to trigger Clitic Movement, it does seem that an optional Movement Rule is in operation in (26)–(28). In Klavans-Rekosh (1976), I argued for such a rule which was formulated as:

[29] Clitic Promotion (optional)

	X	-	V	-	(Adv)	-	$_{VP}$[V	-	Pro cl	-	X		
SD:	1		2		3		4		5		6		
SC:	1		2#5		3		4		∅		6		

Aissen and Perlmutter (1976) argue that Clitic Promotion (Clitic Movement) is due to Clause Union, by which clitics once associated with a lower verb are then re-associated with the new verbal complex. Thus, they are attached to the verb complex as a whole. For Aissen and Perlmutter, a sentence like (26a) has not undergone Clause Union, whereas (26b) would be analyzed as having undergone one application of the rule, and (26c) two applications.

Compare the migration properties of Navajo spatial enclitics with Spanish pronominal clitics: both move items from a lower clause to a higher one, as would be predicted by the principle of strict cyclicity (Pullum (1979)). In Spanish, movement is leftwards, whereas in Navajo, there is rightwards movement, reflecting the

fact that Spanish is a right-embedding language, and Navajo a left-embedding one. The Navajo clitics are part of an NP node, but can also attach to a verbal node, if the original nominal is [+wh]. In contrast, Spanish clitics always attach to a verb. Kaufman argues that Navajo enclitics are sister-adjoined directly to the complementizer *í*, whereas it appears that Spanish clitics are Chomsky-adjoined to the verb (see Perlmutter (1971:80)).

The assumption common to both the Movement Rule analysis and the Clause Union analysis is that the same clitics migrate from a lower verb to a higher (or more complex) verb. Thus, Clitic Promotion in Spanish and Navajo Spatial Enclitic Movement provide two clear examples of syntactic Migration analyses of clitics.

In an earlier paper, Kayne (1972) provides an unusual variant of a MIGRATION analysis: to account for examples of "Complex Inversion" in French as in:

[30] Ton ami partira-t-il? 'Will your friend leave?'

[31] Où Jean voulait-il-aller? 'Where did Jean want to go?'

In questions and with certain adverbs, a subject clitic pronoun co-occurs with a full NP subject. Kayne suggests that all NPs in French be introduced in the base along with a clitic:

[32] NP → NP' - SCL
NP' → Det - N - COMP

where SCL = subject clitic. The actual spelling out of SCL depends on the syntactic features of number and gender of the NP. Kayne's claim is that "subject clitics originate as a kind of NP affix" (fn 68), and that clitics can be moved off an NP by transformation. He argues against a rule which would place a pronominal copy of the subject DIRECTLY in enclitic position.

Kayne formulates several rules to move SCLs out of the NP onto the verb. One of these rules puts SCLs into proclitic position vis-à-vis the verb, another puts them into enclitic position. The procliticization rule (p. 91) is:

[33] Subject Clitic Adjunction

$$NP[\ X\text{-SCL}\ ] - V \rightarrow NP[\ \underline{X}\ ] - SCL + V$$

This adjoins to the verb any subject clitic that has neither been attached post-verbally by SUB-CL-INV (one of Kayne's other Migration Rules), nor deleted by SUBJ-CL-DEL (his deletion rule). (Kayne's analysis assumes rule ordering.) His sample derivation for a sentence like (34) is given in (35) (Kayne (1972:91)):

[34] Il est malin. 'He is spiteful.'

[35] [Lui + il] est malin → STRong FORM DEL
[∅ il] est malin → SUBJ - CL - ADJ
∅ [il + est] malin

Kayne's analysis is unusual in that the migration involves a PIECE, 'SCL', of an NP node, rather than the migration of an entire NP.

So far I have considered two different types of syntactic analysis for cliticization:

- COPYING
- MIGRATION

Hale (1973) summarizes the difference well. His analysis of Walbiri proposes COPYING, whereas his analysis of Warramunga pronominal clitics claims that they are actually moved *in toto* into clitic position, thus exemplifying a typical MIGRATION analysis:

> [36] It would seem ... that Warramunga does not have agreement in the Walbiri sense. Rather, I think the correct way to view the Warramunga case is ... to assume that pronouns are actually moved, rather than copied, into clitic position.
> (Hale 1973)

Many studies of clitic behavior simply assume without argument that clitics are derived by migration from full forms. Consider a typical example from Contreras (1979:179–80), who gives the derivation of (37) from (38):

[37] El hombre [COMP María vió [COMP nosotros examinar el hombre]] desapareció.
The man [COMP Mary saw [COMP us examine the man]] disappeared.

[38] El hombre que María nos vió examinar desapareció.
The man Mary saw us examine disappeared.

(Examples (37) and (38) are the Spanish versions of Quicoli's (1976) Portuguese examples.) According to Contreras (1979:179–80):

[39] The pronoun *nosotros* must be obligatorily cliticized in front of the complex verb *vió examinar*. Its original occurrence may optionally be deleted, so in addition to (1) the following (emphatic) version is generated:

El hombre que María nos vió examinar a nosotros desapareció.
The man Mary saw us examine disappeared.

Although Contreras is not explicit about what "cliticize" means, he tacitly assumes a migration analysis for (37)–(38), but he also allows a copying from pronoun analysis with optional deletion for (39).

Copying with deletion is superficially equivalent to Migration. From surface facts alone, it is impossible to distinguish between them:

[40] Comparison of Migration and Copying with Deletion:

A: $X_Z[Y] \rightarrow [Y + X]_Z$ (by Migration of X)

B: (i) $X_Z[Y] \rightarrow X\ [Y + X]_Z$ (by copying)

(ii) $\rightarrow \emptyset\ [Y+X]$ (by deletion)

Contreras allows both A and B. Although Hale (1973) argues for a Migration analysis, i.e. A, for Warramunga, as shown in (40) he suggests that position B could be an alternative way to view cliticization in Warramunga, and that such a position would capture some historical similarities between the two language types. A choice between these two positions would have to be made on metatheoretical grounds, unless one could be eliminated on grounds of descriptive inadequacy. Fortunately, this is possible.

The most direct evidence against a Migration analysis as a universal characterization of cliticization is that clitics commonly co-occur with a nominal or full pronominal fulfilling the same subcategorization requirements, as in Spanish (41)–(42), from Roldán (1971:8–9), Spanish (43)–(44), or Albanian (45)–(46), from Kazazis and Pentheroudakis (1976:398):

[41] Conozco muy bien a los dos hermanos. (Spanish)

[42] Los conozco muy bien a los dos hermanos.
'I know the two brothers very well.'

[43] Conozco muy bien a ellos.

[44] Los conozco muy bien a ellos.
'I know them very well.'

[45] E panë Kështjellën? (Albanian)
it they-saw castle-the?
'Did they see the castle?'

[46] Kështjellën e panë dje.
castle-the it they-saw yesterday
'They saw the castle yesterday.'

As Steele (1977a:546) points out:

> If clitic pronouns are the synchronic reduction of independent pronouns, we would not expect the two to co-occur. Therefore a strict Migration Analysis of clitics as the sole mechanism for cliticization must surely be rejected. This still leaves the possibility of a Copying Analysis, with Deletion in certain cases, as a potential universally viable approach.

3.3 Base-Generation of Clitics and Subcategorization Features

Broadly speaking, base generation of clitics includes the following positions:

- clitics generated by base rules such as VP →cl V Pro
- clitics generated as verbal features

Base generation means that clitics are underlyingly generated in the same position and structurally associated with the same node as that with which they appear on the surface. Therefore, Kayne

(1972) does not, in fact, argue for base-generation as the term is used here, because he generates clitics under an NP node, and then they are MOVED to a V.

Arguments for base generating clitics can be found in Rivas (1977), Emonds (1975) (for adverbials but not pronominals), Groos (1978), Morin (1978), Stump (1979), and Grimshaw (1980). (Rivas (1977) cites Strozer (1976) but the reference has been unavailable to me.) For example, Rivas generates clitics in the base and then assigns particular values of case, person, number, and gender by means of feature assigning rules. His phrase-structure rule is (Rivas (1977:34)):

[47] $\overline{V} \rightarrow \overline{CL}\ V$

where $\overline{CL}$ is a 'Superclitic' node that dominates the individual clitics. The expansion of $\overline{CL}$ is given as:

[48] $\overline{CL} \rightarrow [\ \begin{matrix} CL, \\ \alpha CASE \end{matrix}\ ]^*$, with $1 \leq \alpha \leq n$

where α takes one particular value for each application of the rule to prevent double case-marked clitics. Rivas (1977) recognizes that in Spanish, CL and NP can coexist in the surface, so his mechanisms for feature checking purport to allow this possibility. His Case Matching rule does the following (from Rivas (1977:199)):

- It checks if the NP to the left of the verb is [+NOM].
- It checks if the NPs to the right of the verb are [-NOM].
- It checks if the number of objects present in the sentence agrees with the number of objects that the verb can have, considering whether an object is subcategorized optionally or obligatorily.
- If the particular verb requires special case markings, it checks whether the object NPs have the required case, and the object PPs have the required preposition.
- If the particular verb does not require special case marking, it checks whether the first NP is [+ACC], and the second and third NPs are [-ACC] NPs.

- This rule operates only on constituents under the VP', and only if all constituents are NPs or a PP of the form (Prep NP).

If any of these checkings fail, the sentence is eliminated.

Jaeggli (1978) criticizes Rivas (1977) on the following grounds: his case marking rules fail to account for the fact that accusative clitics are not allowed in passives whereas indirect object clitics are, as shown in (49)–(50) (from Jaeggli (1978:16)):

[49] a. María lo ama a Juan
Mary him loves John
'Mary loves John.'

b. *Juan lo es amado por María.
c. Juan es amado por María.

[50] La carta me fue entregada por Juan.
'The letter to me was delivered by John.'

Jaeggli shows that Rivas' attempt to solve the problems raised in (49)–(50) is inadequate because Rivas is forced to adopt an ad hoc analysis of passives. Therefore, according to Jaeggli, Rivas' Matching Rules make false claims about the reason for the ungrammaticality of (50).

Furthermore, Jaeggli criticizes Rivas' analysis of Tough constructions, as in:

[51] Es difícil convencerlos a los niños.
is hard to+convince+them the children.

[52] *Los niños son difíciles de convencerlos.

where the matching rules are inadequate again. In (51), the direct object agrees with a clitic in an infinitival complement embedded under a Tough Adjective. The matching rules stipulate that the corresponding Tough Construction (52) will be ungrammatical. Finally, Jaeggli shows how Rivas' account of Clitic Doubling in topicalized and dislocated structures is similarly inadequate.

To sum, Jaeggli questions the explanatory value of Rivas' analysis. He argues that Rivas is forced to make unmotivated claims

about deletion and empty NPs in order to make his Matching Rules work.

Some of these problems are dealt with in Grimshaw (1980), within a different framework from that of Rivas. She proposes the following PS rules:

[53] $\overline{V} \rightarrow (CL)_1 \quad (CL)_2 \quad (CL)_3 \quad (AUX) \quad V$

(Her clitic nodes are numbered for ease of reference.) Associated with each clitic node is a set of lexical restrictions. The framework is that of Bresnan (1978, 1979), and Kaplan and Bresnan (1979), the relevant properties of which Grimshaw summarizes as follows:

> Two central properties of the theory are the role assigned to grammatical functions in syntactic rules, and the extension of lexical rules beyond the domain of derivational morphology—to the statement of syntactic generalizations.

Information from the lexicon and from the PS rules combines in the construction of FUNCTIONAL STRUCTURES. Functional structure assignment consists essentially of a device to match the requirement of the generated structure with the individual lexical items inserted in the structure. Each functional structure is subject to a set of well-formedness conditions. For cliticization, the important condition is CONSISTENCY, which is satisfied if every grammatical feature of each grammatical unit has a unique value. Thus, complementary distribution of clitics and corresponding NPs and PPs follows from the requirement of consistency. Other constraints, COHERENCE and COMPLETENESS, explain why clitics are subject to, and meet the subcategorization requirements of verbs.

Grimshaw (1980) tackles some of the problems that Rivas (1977) and Jaeggli (1978) were unable to solve, but, unfortunately, Grimshaw's assumption that "clitics are in complementary distribution with the NP or PP complements to which they correspond" (p. 2) is false. As examples (41)–(46) above show, clitics can co-occur with their associated nominal. The very same problems that the Migration analysis has in accounting for such co-occurrence is a serious problem for Grimshaw (1980) as well.

Arguments for the base generation of clitics as verbal features are given by Groos (1976), Harris (1978), Stump (1979).

(Rouveret and Vergnaud (1980) cite Vergnaud (1971) as base-generating clitics as verbal affixes but this paper was unobtainable.) Briefly, clitics and affixes are both generated by the base. Groos (1976:25) gives a base rule for expansion of the verb node:

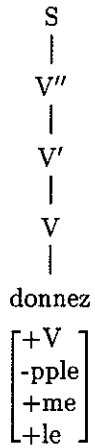
[54] $VP \rightarrow (\overline{CL}) \quad \overline{V} \quad AFF \ \ldots$

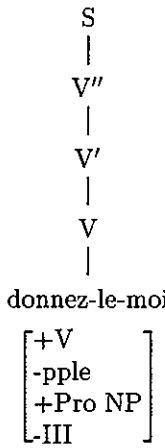
Further expansion rules for the Cl node are given as well. Thus, Groos proposes empty clitic nodes as sister to V. She argues, using the typology of Zwicky (1977) criticized in Chapter 2, that clitics are functionally similar to inflectional affixes, and (1976:34) concludes that:

> If we take clitics to be affixes, the following generalization appears: just as subject pronouns (not realized in surface structure) can be interpreted by means of the inflection on the verb, direct and indirect object pronouns (if not lexicalized in surface structure) can be interpreted by means of the clitics on the verb.

Groos's analysis attempts to account for the agreement-like character of pronominal cliticization. But there are serious problems with her and other similar analyses, as is shown below.

The analysis of Stump (1979) is similar to that in Groos (1976) in analyzing clitics as inflections. However, he assumes that clitics are groups of features on constituents dominated by V' and that they are not spelled out until after the application of all syntactic rules. Stump proposes a set of agreement-like matching rules to be included in the lexicon to satisfy the subcategorization requirements of the verb, and he gives a set of spelling out rules for expansion of the verbal features. An example derivation (simplified) of a French positive imperative construction from Stump (1979:37) is:

[55]


[58]


In (55) the verbal lexical subcategorization requirements have been met, and in (58) they are spelled out.

Harris (1977) also analyzes French, with particular attention to *français populaire*. On the basis of S's like

[59] Je la déteste, moi, Marie
I=her=despise I, Mary
'I despise Mary.'

Harris claims that French is undergoing a typological drift from SVO to VSO. He argues that (59) shows mandatory pre-verbal morphology. His evidence is that *je* and *la* are bound morphemes and cannot occur independently of a V. Moreover, the presence of a disjunctive or strong form does not remove the need for the bound prefix *il*, *je* or *la*, as shown by (60)–(61):

[60] Je la déteste, elle. 'I despise her.'

[61] Je la déteste, moi. 'I despise her.'

These S's, according to Harris (1977), are not right-dislocated; rather they each use a single-clause intonation pattern, as evidenced by the possibility of phrase final stress on *elle* in (60) and on *moi* on (61). Further, Harris (1977:44) claims that the VSO order in (59) is unmarked whereas the alternate order given in (62)

[62] Je la déteste Marie moi
I her despise Mary I

is marked. Harris concludes that

> with the development of a VSO (or, less often, a VOS) order, a new prefixal morphology has been created, which in general clearly marks on the verb and identity of the subject and object constituents occurring elsewhere in the sentence.

Thus his features are, as in Groos (1978), Stump (1979), and Chomsky (1979, below) part of the verb structure, i.e. verbal features.

Chomsky (1979) also suggests that clitics are realizations of a strict subcategorization feature of the verb. He formulates a rule

[63] $\left(\begin{smallmatrix} V \\ F_i \end{smallmatrix} \right) \rightarrow (_V \ \alpha V) \ / \ldots \ \beta^i$

where β is the variable Pro/NP and where government is indicated by *i*. For example, if β is PRO then (63) gives a feature to be spelled out as a clitic. If β is NP, then there is no feature to be spelled out. Given Chomsky's matching indices, indicated by *i*, the subcategorization feature will be matched with the Pro/NP. This type of matching is reminiscent of Rivas' lexical matching rules above, and of Grimshaw's consistency requirement. Chomsky also assumes that clitics and full NP's do not co-occur, which was shown above to be incorrect. However, his remarks on clitics in the Pisa lectures were so brief, that it is difficult to ascertain how a fuller analysis would treat these problems.

These three analyses of clitics as features—Groos (1978), Stump (1979), and Chomsky (1979)—all deal primarily with pronominal clitics, although Stump (1979) also comments briefly on *y* and *en* in French. All three analyses assume that clitics are generated exclusively under a V node which implies that clitics have equal status as verbal features. However, there is evidence that this cannot possibly be the case for all languages. Consider, for example, a language like French. Kayne (1975:18,n.17) points out differences between subject and object clitics with respect to positioning within the verb group, with respect to clitic sequencing constraints, and with respect to the positioning of the negative particle *ne*. He argues (Kayne (1972)) that subject clitics have a different derivation from object clitics (see Section 3.2 in this chapter). This difference between subject and object clitics is necessarily obscured by a theory which treats all clitics in the same way.

Another problem of the clitics-as-verbal-features analysis is that of accounting for certain similarities between subject clitics and subject NPs. To continue with French, Kayne (1975:85) points out that subject clitics occupy the same position in surface structure as full NP subjects. Another similarity between subject clitics and subject NPs is that they seem to trigger agreement in the same way:

[64] Jean vient.

[65] Il vient.

It would seem simplest, then, to say that *il* is the NP subject in (65) just as *Jean* is the NP subject in (64).

To sum up, I do not mean to deny the fact that clitics exhibit some affix-like behavior; I only want to point out that the strongest form of the clitics-as-affixes hypothesis is untenable. So far I have presented four ways to analyze clitics: Copying, Migration, Base-Generation and Feature Expansion. As a universally applicable analysis, all but Copying have been shown to be inadequate. Although individual languages might be suited for any of these analyses only copying has the potential for providing a unified description. In the next section, I leave syntactic analyses and look at a specific aspect of cliticization: CLITIC ATTACHMENT as effected by Readjustment Rules, by Boundary Readjustment, and Metrical Restructuring.

3.4 Readjustment Rules: Phonological Boundary Reduction and Metrical Restructuring

Readjustment Rules, also known as Re-structuring rules, (Ristrizzurazione in Rizzi (1978)) are operations which adjust the bracketing of a given syntactic structure, without changing the linear order of elements. An example from Chomsky and Halle (1968:372) is:

[66] This is [the cat that caught [the rat that stole [the cheese]]].

where the intonational structure is:

[67] This is the cat—that caught the rat—that stole the cheese.

To rectify the apparent discrepancy between the syntactically motivated surface structure and what is apparently required as input to the phonological component, Chomsky and Halle tentatively suggest a set of "flattening" or readjustment rules, which they suggest might be rules of performance. The features of Readjustment Rules are that they typically remove hierarchical structure by moving or eliminating bracketing; they do not re-order elements in a string either by movement or copying.

Langendoen (1975:546) took Chomsky and Halle's examples, such as (66), and formalized the Readjustment Rule necessary for string restructuring. His rule takes embedded clauses, and sister-adjoins them under a matrix clause. He argues that Readjustment Rules are rules of grammar, and although the motivation for them may be in part due to performance factors, the rules themselves are not principles of performance.

Unlike Readjustment Rules, which have access to syntactic information, Phonological Boundary Reduction is formally strictly phonological in nature.[2] The distinction is summed up in Selkirk (1974:577):

> Phonological rules are not in themselves sensitive to syntactic structures. . . . For example, an external sandhi rule like the one below never mentions phrase structure categories.
>
> $$\begin{matrix} \text{V} \\ \text{[-stress]} \end{matrix} \rightarrow \emptyset \; / \; \underline{\quad} \; \#\text{V}$$
>
> Instead, the operation of external sandhi rules, applying locally in the string, is determined by what word boundaries—how many of them, if any—are found between the segments of two consecutive terminal elements in surface structure. External sandhi rules are blind to labelled bracketing or syntactic structure, but not to word boundaries, which, along with distinctive feature matrices and other boundary elements, comprise the terminal string to which nonprosodic rules can apply.

Cliticization by Readjustment Rule and by Boundary Reduction both involve the postulation of attachment algorithms and so are considered together in this section, despite the fact that they make different claims about Grammar in other respects.

Treatments of clitics in terms of structural Readjustment are Lee (1969), Selkirk (1972), Kaisse (1980b), Pullum (1980). Selkirk's position is summarized in Pullum (1980:13):

> A principle which Selkirk calls "SPE I" places the boundary symbol # at the left and right extremities of each major category, the major categories of interest here being N, V, A, NP, AP, S and $\overline{S}$ ... . A second principle, Selkirk's "SPE II," which also derives from SPE, erases redundant boundary symbols at constituent margins: "$[_\alpha$ # $[_\alpha$ #" becomes "$[_\alpha$ # $[_\alpha$," and "# $_\alpha]$ # $_\alpha]$" becomes "$_\alpha]$ # $_\alpha]$," provided α is not $\overline{S}$. This applies at surface structure before any purely phonological rules, so that as far as the phonological rules are concerned, each constituent other than $\overline{S}$ has a single # at its lefthand end and another at its right. SPE I and SPE II are assumed to be universal.

Pullum (1980:14) adds a rule to Selkirk's set:

[68] X^0 Readjustment

$$[_{X^0}\ \#\ [_{X^0}\ W\ \#]\ Q\ \#] \rightarrow [_{X^0}\ \#\ [_{X^0}\ W]\ Q\ \#]$$

where X^0 is a lexical category with 0 bars, i.e. N, V, or A, and Q is (as in Halle (1973)) a string of unstressed segments.

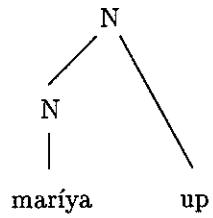
This is necessary in a derivation like the following from Luiseño where the 3-sing. pronoun *up* attaches to the word *Maríya* 'Mary' from *maríya up héyiq* 'Mary is digging'.

[69]	$[_{NP}\ \#\ [_N\ \#\ [_N\ \#$ maríya $\#]$ up $\#\ ]\ \#\ ]$	(SPE I)
	$[_{NP}\ \#\ [_N\ \ [_N$ maríya $\#\ ]$ up$]\ \#\ ]$	(SPE II)
	# maríya up #	(X^0 Readjustment)
	# maríya p #	(Vowel Deletion)
	[maríyap]	(phonetic representation)

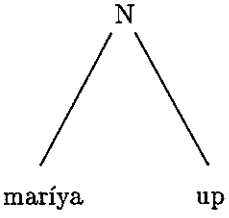
(from Pullum (1980:17))

Example (69) shows how the potential pronominal clitic *up* '3sg' occurs next to the potential host word *Maríya* 'Mary'. By SPE I, the outermost boundary symbols are erased; by SPE II, the next set of boundaries is erased; by X^0 Readjustment, the rightmost boundary of the N is erased, resulting in *#maríya up#* being within the same N bracket. Notice that this is similar to a structural readjustment which would take (70) and convert it to (70′).

[70]



[70′]



This shows how boundary reduction and structural readjustment are similar in certain respects.

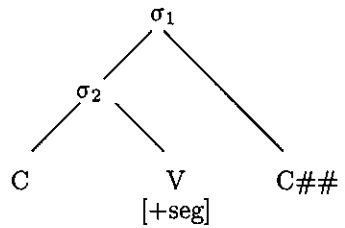
Crucially, treatments of cliticization by Readjustment Rule and by Boundary Readjustment assume that the clitic is already positioned in the attachment environment. For example, the Luiseño encliticization rule in Kaisse (1980a) is:

$$[80]\ [_a\ \#\ xy\ \#\ ]_a\ \ CLT\ CLT \rightarrow [_a\ \#\ xy\ \#\ CLT\ \ CLT\ ]_a$$

Kaisse (1980a,fn.1) states that she assumes a transformational analysis in which at least some clitics are generated in the same place as the full words they correspond to, and are then moved to the slot where clitics occur on the surface. Presumably after movement they are attached by structural Readjustment.

Finally, mention must be made of metrical theory (Liberman and Prince (1977); Vergnaud (1978); and McCarthy (1979)) where cliticization is viewed as readjustment of metrical (phonological) structures. A clear example is provided by McCarthy (1979:9), who formulates the following rule for Hebrew. The rule cliticizes an "extra-metrical" consonant onto the end of a heavy syllable:

[81]



where σ= syllable. In (81) the superordinate syllable σ_1 has two immediate constituents, the left daughter σ_2 and the right daughter C. (The binary branch has other consequences in McCarthy's analysis.) This example is included to show another possible phonological treatment of cliticization, although full consideration of the implications of the syllabic structure in (81) will not be given here. Example (81) shows that metrical readjustment requires that a clitic be already situated so that structural readjustment operates on the terminal string. However, in (81) phonological structure is created, i.e. the consonant C is adjoined to the syllable, whereas in the examples above (see especially those from Pullum (1980)), phonological structure was eliminated.

This chapter has reviewed various syntactic and phonological analyses of cliticization. The next chapter argues that there is a distinction between syntactic and phonological cliticization, and proposes a system within which to clarify this distinction.

Notes

[1]More specifically, Perlmutter observes a correlation between the presence or absence of (3) and the grammaticality of sentences like:

(i) who do you think / saw Bill /

(ii) *who do you think that saw Bill

Perlmutter's observations about typology spurred others such as Chomsky and Lasnik (1977) to seek an explanation for the correlation between (i) and (ii) in more general theoretical terms. Their claim has been contested by Maling and Zaenen (1978). Haiman (1974:part II) argues that the Type A/Type B distinction correlates with the V/2 constraint. He hypothesizes that:

(iii) Only those languages which have or have had the V/2 constraint can ever be Type A languages.

[2]Pyle (1972) argues that, because boundary marker insertion is dependent on labelled bracketing (see Chomsky and Halle (1968)), boundary reduction is equivalent to syntactic readjustment. He argues for global rules which encode syntactic information into a derivation.

Chapter 4

Towards a New Theory of Clitics

4.1 Introduction

The first three chapters of this thesis have shown:

1) that a wide variety of apparently heterogeneous items are referred to in the literature as CLITICS (Chapter 1); and

2) that no adequate typology of clitics has yet been developed (Chapter 2); and

3) that no single and universally viable analysis of clitics and cliticization has yet been formulated (Chapter 3).

This chapter presents an analysis of clitics which is prerequisite to formulating an account of clitics in any given language within the framework of any given theory. The purpose of this chapter is to specify exactly what the characteristics of clitics are across languages, and what the metatheoretical constraints on analyses of clitics are. It attempts to answer the questions:

1. what is a clitic,

2. what must a theory of clitics account for?

The chapter progresses as follows: first, two hypotheses basic to any adequate theory of clitics are presented. Hypothesis A is the most basic, and states that cliticization is a unitary phenomenon. An explanation of relevant terminology is given, including a discussion of certain ambiguities which have resulted in the past from inadequate terminology for clitics and hosts. The second hypothesis, Hypothesis B, involves detailing the five parameters which are universally characteristic of all clitics. The next sections of this chapter show how these five parameters are necessary in defining the major clitic types. My claim is that the parameters are coherently inter-related; discussion of these relationships is given. Further, I claim that just these five parameters, and no others, are basic to a theory of clitics. Finally, future directions for research are suggested within the framework of the five parameter system.

4.2 Hypothesis A: There Exists a Unitary Phenomenon Called Cliticization

It has been asserted throughout that the examples are all of CLITICS. Although they may vary somewhat from language to language, they do not reflect altogether different phenomena. What these elements have in common is that they are neither affixes, nor free words. It is sometimes said that clitic elements are 'phrasal affixes' (Nida (1946), Bloomfield (1935)) or bound phrasal morphemes (Fudge (1969)).

The affix-like behavior of clitics has often been noted. For example, Perlmutter (1971) notes the similarity between surface structure constraints for clitics and fixed morpheme order constraints which commonly obtain for affixes. He states the generalization that in all languages in which clitics move to a particular place in the sentence, there are surface structure constraints on the relative order of clitics. Whereas many languages have "free word order" (see Hale (1979)), no languages have "free clitic order." Schachter (1974), Tegey (1975), and Hetzron (1976) give examples of limited freedom of clitic ordering, but in general, Perlmutter's observation holds.

While clitics seem to resemble affixes in some respects, they are at the same time word-like in other ways. In particular, their meaning seems to be like that of any full word; indeed, they are often related to variants with full word status. Furthermore, any semantic relation between clitic and host is often coincidental, as shown in (1):

[1] girbadja =ndu mamiyi gambira (Ngiyambaa)
kangaroo=2NOM catchPAST yesterday
'You caught a kangaroo yesterday.'

In (1) the enclitic =ndu 'you' bears no direct semantic relation to the host girbadja 'kangaroo'. If the sentence is scrambled as in (2), the point is even clearer:

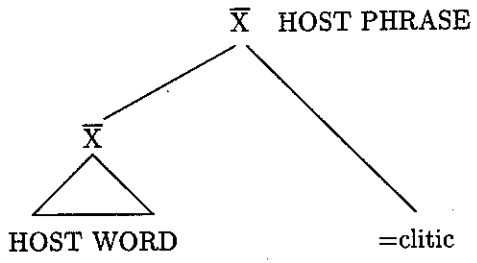
[2] gambira =ndu mamiyi girbadja (Ngiyambaa)
yesterday=2NOM catchPAST kangaroo
'Yesterday you caught a kangaroo.'

See also Nida (1949:97) who observes that certain clitics have the same sort of positional freedom as syntactic items have. In contrast, an affix is always bound and is related to its base semantically.

Clitics have word-like characteristics in another respect; namely, they are able to attach to entire phrases. Perlmutter (1971) refers to the "constituent to which clitics attach" implying that (1) clitics are free, and then attach, and (2) the attachment is to an entire constituent. Kaufman (1974:514) observes that "an enclitic may modify phrases as well as single words."

Some new terminology will be introduced to clarify the idea that cliticization should be viewed as phrasal affixation. Zwicky's term 'host' is vague, and I propose the terms 'HOST WORD' and 'HOST PHRASE' to distinguish between the following types of hosts:

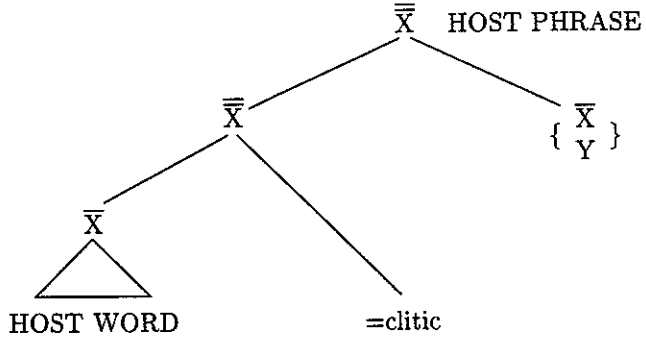
[3]



in (3)–(4), the $\overline{\overline{X}}$ notation is used to indicate phrasal nodes, (cf. Jackendoff 1977).

The HOST PHRASE can also be dominated by a phrasal node $\overline{\overline{\overline{X}}}$:

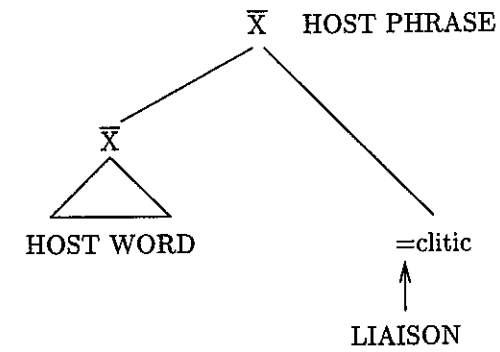
[4]



Such a structure is relevant to the possessive *'s* construction in English. See in particular (6) and (30) below. The HOST WORD (HW) is defined in terms of linear adjacency to the clitic, whereas the HOST PHRASE (HP) is a structural notion.

To refer to the actual phonological attachment between clitic and adjacent word, I will use the French term LIAISON. Schematically:

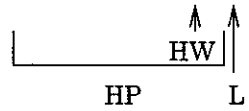
[5]



The notions HOST PHRASE (HP), HOST WORD (HW), and LIAISON (L) were alluded to in Chapter 1 for (59)–(63), where I discussed the phonological attachment of clitics to HOST PHRASES in English and Ngiyambaa. Other examples are given below from Beja

(Hudson 1974), Yidiny (Dixon 1977), and Greek, where the relevant terms are indicated.

[6] the king of Sweden's crown



[7] yaas =w -a 'You are a dog.'
↑ ↑
HW L
dog =be-IIsing+masc (Beja, from Hudson (1974))

[8] ŋayu galiŋ=ala bulmba:gu 'I'll go at once to the camp!'
↑ ↑
HW L
I-SA go-PRES=now camp-ALL (Yidiny, in Dixon (1977:236))

[9] en =o:n =tē =pole: 'therefore, in the city ...'
↑ ↑ ↑ ↑
L L L HW
in =therefore=the=city (Greek)

This terminology provides a way to view cliticization and to understand the loose semantic, syntactic, and phonological relationship between clitics and their hosts. Because cliticization can be a PHRASAL, not word, level phenomenon, the weak connection between clitic and phrasal or word host is not surprising. An example of the loose 'semantic' (i.e. often a feature of the phrase) connection was given above for Ngiyambaa, and in Chapter 1 for Walbiri. An example of the loose 'morphological' connection can be found in the post-inflectional clitics of Yidiny (Dixon 1977). According to Dixon (1977:236):

> There is a set of about eight clitic-like suffixes; these can as a rule occur on any word (whatever its part-of-speech membership) and always follow case or tense inflections.

Dixon's observation about clitic ordering in Yidiny follows from the general principle that all cliticization is extra-inflectional. Klavans (1979) argues that any case of apparent 'endoclisis', that is a clitic which seems to occur within a word, in fact involves a clitic which is itself inflected. Some examples are:

[10] bara- bara:y =ndu -gal (Ngiyambaa)
REDUP-quick+ABS =2NOM-pl.
'Put some speed on, all of you!'

[11] dabaloo-aa-b =aa-na (Beja)
small -pl -ACC.masc =be-2nd.pl.
'you are small'

In (10), the pronominal clitic =ndu is inflected for number, giving =ndu-gal; in (11) the copular clitic =aa is inflected for person and number, giving =aa-na.

An example of the loose 'phonological' connection is provided by Turkish enclitics. Vowel Harmony applies to the entire host=clitic group, but Stress Assignment ignores the clitic, as in:

[12] gördǘ =mü 'Did (s)he see?'
see-PAST/3sg=Q

[13] gıttí =mı 'Did (s)he go?'
go-past/3sg=Q

In (12) the interrogative enclitic =mi has undergone Vowel Harmony and appears as =mü; in (13) =mi appears as =mı. Turkish is (loosely speaking) a stress final language, but both (12) and (13) have penultimate stress. That is, the enclitic cannot be included in the placement of stress, as evidenced by (12′) and (13′):

[12′] *gördü=mǘ

[13′] *gıttı=mí

Further detail on stress and clitics in Turkish is given in Chapter 5.

Another example of the loose phonological connection between clitics and hosts is found in Ngiyambaa, where host clitic groups undergo DH-Palatalization (DH-Pal) but host word stress is unaffected by the presence of the clitic(s). The rule of DH-Pal in Ngiyambaa is:

[14] DH-Palatalization (informally stated)

$$\text{word} \; [\; [\; \ldots \; \begin{matrix}+\text{V}\\+\text{HIGH}\end{matrix} \; (\text{N})\;]\;[\;\text{DH}\;\ldots$$

$$\text{DH} \rightarrow \text{dj}$$

where (N) is a homorganic nasal (See Donaldson 1980).

(14) shows that a root or word ending in /i(:)/ or /y/ triggers DH-Pal for suffixes and clitics. Some examples with the enclitic pronouns DHu '1 NOM' and DHi: '1 OBL' are:

[15] míri + =DHu → míri=dju
*míri=dhu

[16] burá:y + =DHi: → burá:y=dji:
*burá:y=dhi:

[17] múra + =DHu → *múra=dju
múra=dhu

[18] múra + =DHi: → *múra=dji:
múra=dhi:

In examples (15)–(18), the stress pattern of the host words remain the same, regardless of the presence of the clitic.

The next section deals with defining possible clitic positions with respect to possible HOST WORDS and HOST PHRASES.

4.3 Hypothesis B: Cliticization is a Unitary Phenomenon Subject to Five Parameters

It has often been assumed that clitic placement follows two different principles. For example, Perlmutter (1970:48:fn25) conjectures:

> ... It seems that the position in the sentence to which clitics can move is also severely restricted by universal grammar: they can move to the verb, or to "second position" in the sentence ...

George and Toman (1976:235) also claim:

> We assume that languages have universally only two options in the way they place clitics: a language may either put the clitics in the second position in the sentence or attach them to a designated lexical category, usually verb. As we noted, Czech takes the first option. It differs in that respect from, say, Romance languages, which attach the clitic to the verb. Czech also differs from such languages as Ancient Greek which place clitics in the second position but define this position with respect to words, not major constituents.

However, views like this are too limited: they are based on data from primarily one language or language family. In addition, the division of clitics into two types—lexical and Second Position—is too simplistic and thus inadequate.

This section suggests that clitic placement can be viewed in a unified way by referring to the following parameters:

[19] Cliticization Parameters

- P1: Clitic Identity
- P2: Domain of Cliticization
- P3: Initial/Final
- P4: Before/After
- P5: Proclitic/Enclitic

A brief definition of P1–P5 will be given first, followed in later sections by an account of how these are the crucial parameters in defining cliticization possibilities.

P1 – Clitic Identity

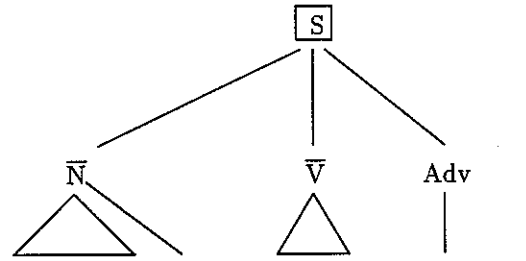
I will assume, following Pullum (1980), that clitics are marked with a lexical feature by which they can be identified (P1). For George and Toman (1976), the feature is [+clitic]. A feature is not the only option. Kayne (1972) proposes a node Clitic. Under his analysis, clitics are base-inserted and can then be identified by reference to the clitic node. Groos (1978) makes a similar claim, following

Emonds (1976). Further discussion of these and other alternatives was given in Chapter 3. My assumption is that cliticization rules can recognize clitics on the basis of a lexical specification.

P2 – Domain of Cliticization

Informally, a node N is the Domain of Cliticization (henceforth P2) for a clitic c if the syntactic position of c is determined with respect to the immediate constituents of the designated node N. In (20), the relevant node (P2) is S:

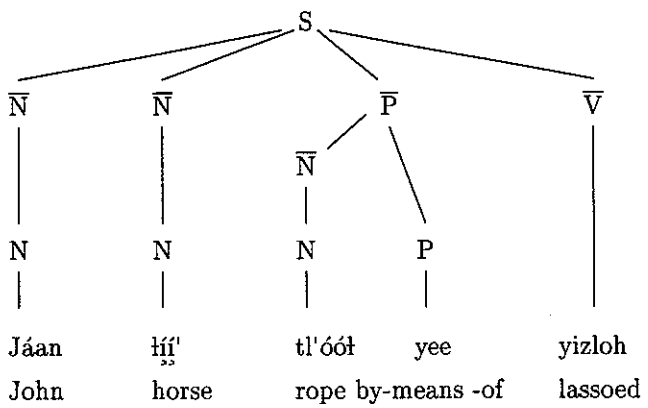
[20]



ŋadhay guya =ndu dha-yi gambira
tasty fish =2NOM eat-PAST yesterday
'You ate a tasty fish yesterday.' (Ngiyambaa)

A slightly different example is given in (22)–(24) from Navajo (Perkins 1974), in which the Domain of Cliticization (P2) can be any N̄. (21) is the base sentence:

[21]



'John lassoed a horse with a rope.'

to which the clitic =hanii can be added to give:

[22] Jáan=hanii ɬíí'tl'óóɬ yee yizloh.

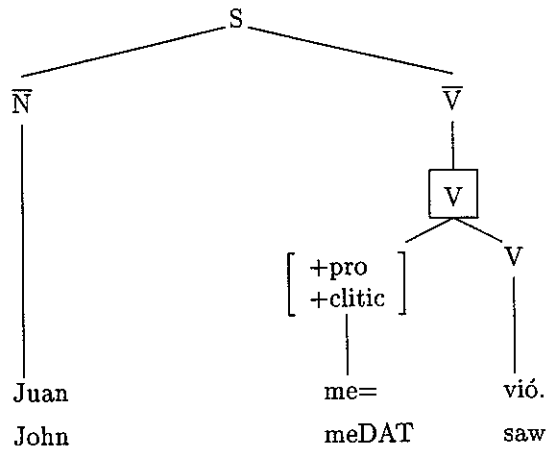
[23] Jáan ɬíí'=hanii tl'óóɬ yee yizloh.

[24] Jáan ɬíí'tl'óóɬ=hanii yee yizloh.

(Note: the notation '=' has been added; it is not in Perkins (1974).)

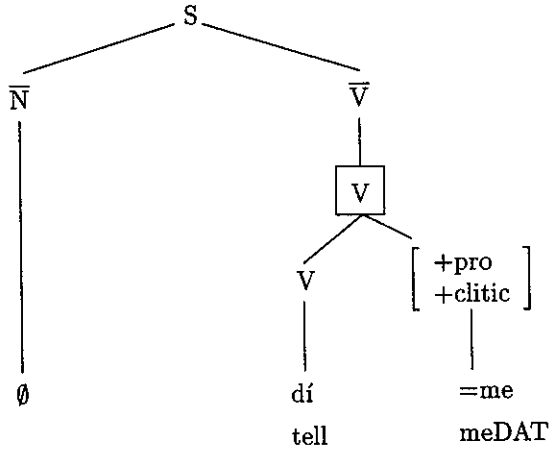
In the Spanish examples (25) and (26), the Domain of Cliticization is 'V'. The structure in (25) and (26) is that following the application of Readjustment Rules (Chomsky and Halle (1968), Langendoen (1975), Kaisse (1979), and Pullum (1980)), and thus clitics are shown under the V node.

[25]



'John saw me.'

[26]



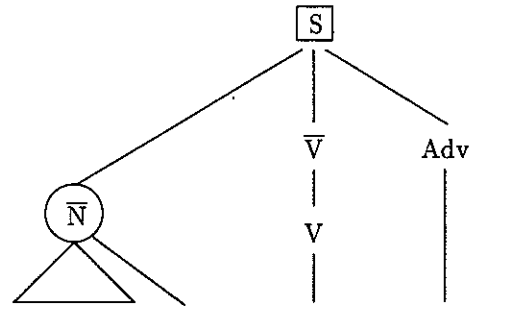
'Tell me!'

The difference between (21)–(23) and (25)–(26) is defined by other parameters discussed below.

P3 – Initial/Final

The parameter Initial/Final refers to the first or last constituent or word under the Domain of Cliticization (P2). That is, 'P3' is the host phrase or word relevant for clitic attachment. For example in (27a), the relevant constituent is INITIAL (P3) under S (P2), which is ŋadhay guya 'tasty fish'. P3 is indicated by a circle:

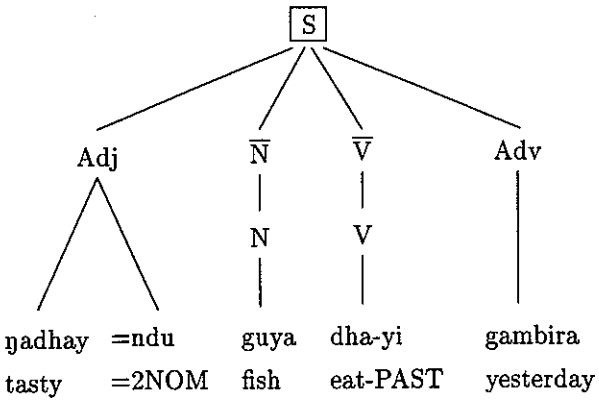
[27a]



'You ate a tasty fish yesterday.'

Contrast this with (27b) where P3, the relevant Initial or Final element under the Domain of Cliticization, is Adj. The structure in (27b), like that in (25)–(26), is after Readjustment Rules have applied.

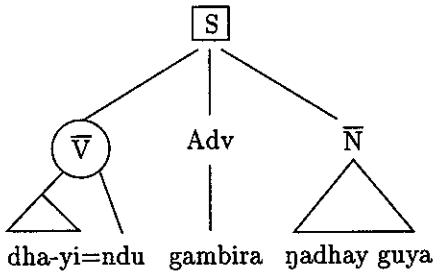
[27b]



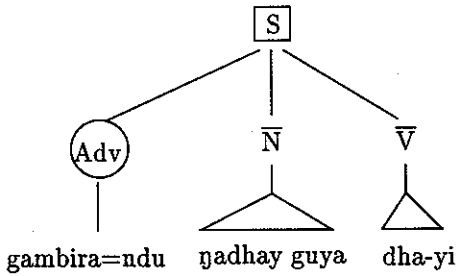
'You ate a tasty fish yesterday.'

With another of the possible word orders, the initial node could be $\overline{V}$ or Adv:

[28]

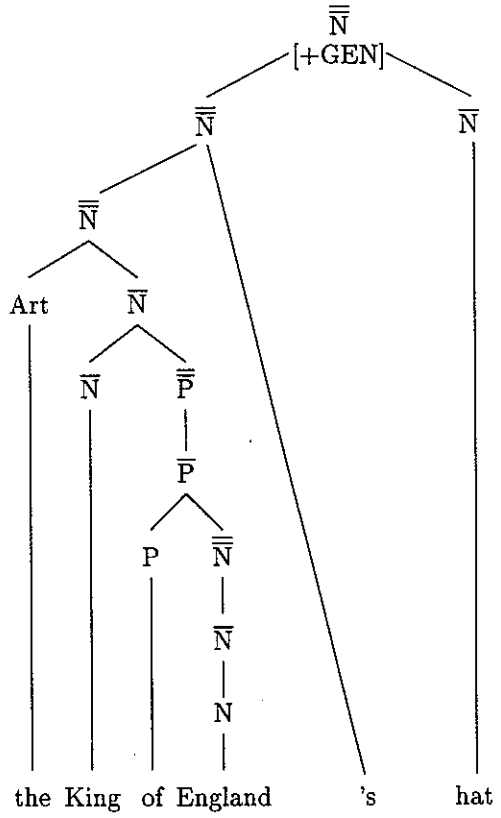


[29]



For the English possessive morpheme *'s*, the Domain of Cliticization is an $\overline{\overline{N}}$ node, with the feature [+GEN]. The clitic is placed on the Initial constituent of that $\overline{\overline{N}}$, as in (30):

[30]



Example (30) illustrates how the Domain of Cliticization may include reference to features of a node. In the English genitive construction, the relevant feature is [+GEN].

Another example where a feature is necessary is with Spanish verbal clitics. (31) and (32) give the relevant parameters, and (25)–(26) illustrate, respectively, the effect of the feature [±TENSE] in clitic occurrence:

[31] P1: Spanish pronominal clitics
P2: V, [+T]
P3: Initial

[32] P1: Spanish pronominal clitics
P2: V, [-T]
P3: Final

This provides an account for the fact that pronominal clitics precede a tensed verb in Spanish, but follow an untensed verb. (See Chapter 1 for other Spanish examples.)

P4 – Before/After

The next parameter necessary for an adequate explanation of cliticization is Before/After, which refers to the locus of clitic attachment. If the clitic attaches to the left of the relevant node (P3), it is Before; if it attaches to the right, P4 is After. For example, in (30), the *'s* morpheme occurs at the right side, that is, AFTER the Initial constituent (P3) of the Domain of Cliticization (P2). In other words, for the English possessive *'s*, the following obtains:

[33] P1: English possessive *'s*
P2: $\overline{\overline{N}}$ [+GEN]
P3: Initial
P4: After

Similarly, for 2P enclitics, P4 is After, as shown in (27)-(29).

Each of the four parameters presented so far are necessary for a complete characterization of cliticization. This was also noticed by Hale (1973:314), who recognized that these same notions are crucial in defining 2P:

> I feel ... that the correct formulation of Aux-Insertion will make reference to *constituent of sentences*; that is, the *auxiliary* is inserted to the *right* of the immediately following single *constituent* which is immediately dominated by the sentence node S. .... [my emphasis – JLK]

In terms of my parameters, Hale's reference to "constituent of sentence" is my Domain of Cliticization (P2); his identification of the auxiliary is my P1; his recognition of the importance of the notion "inserted to the right" is equivalent to the parameter Before/After (P4); and his pinpointing of the target constituent under S is my Initial/Final (P3).

P5 – Proclitic/Enclitic

P5 is a property of the clitic itself. It refers to the place where phonological liaison will occur. For example, the English possessive *'s* is ENCLITIC, so liaison occurs to the left of the clitic item. For the Classical Greek article, P5 is PROCLITIC, because liaison occurs to the right of the clitic. This can be represented in informal terms as:

[34] Proclitic: clitic=
Enclitic: = clitic

where '=' indicates the place of phonological liaison vis-à-vis the clitic itself.

Note that when clitics are concatenated, P5 does not change. For example, in

[35] dá =me =lo !
give me it !

the enclitic *=me* is still ENCLITIC. It is not Endoclitic, nor proclitic to *=lo*. Indeed, I claim in Klavans (1979) that Endoclisis is not even an option for P5. In later sections of this chapter, I discuss other purely phonological aspects of cliticization, including an explanation of my arguments against Endoclisis as a possible clitic type.

4.4 Predictions of the Analysis

4.4.1 Possible Clitic Types

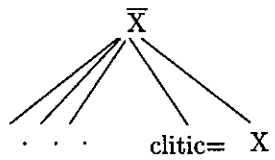
These five parameters predict that there will be exactly eight possible locations for clitics within a given domain, i.e. that there are

eight possibilities in terms of the relevant constituent within the Domain of Cliticization: Initial/Final (P3); the locus of syntactic attachment, Before/After (P4); and the direction of phonological attachment, Proclitic/Enclitic (P5). As shown below, my analysis provides a framework in which to analyze clitics which might on the surface appear unusual or unrelated, such as the clitics of Ngaŋkara, accented Greek proclitics, and some English clitics.

Figure 4.1 shows schematically how the Five Parameter System can be viewed in terms of hierarchical structure and linear precedence. Examples of each possible clitic type are provided, with pointers to relevant discussion in this book.

I have substantiated each of the eight possible clitic types. Consider first Type 6 clitic: the type of structure in which such a clitic would occur is:

[36]



For example, (36) could be a verbal proclitic in a V-final language, or a nominal proclitic in a language where the phrasal structure of the $\overline{N}$ is N final.

The example of Type 6 given in Figure 4.1 is from a description of Old Indic by Anderson (1979). He gives the two positions for Proto-Indo-European preverbs as:

[37] a. # P . . . V #
b. # . . . . PV́ #

In the latter case:

> . . . if the verb is accented (in subordinate clauses) then the preverb is proclitic. . . . (*op.cit.*:31:fn14)

An example of this is:

[37] c. gā́ anu= gmán
cows clitic followed-IIIpl
'They followed the cows.'

CHART II

Examples:		1 English Tense Contraction	2 Greek article	3 Ngiyambaa enclitics	4 Tepecano an=	5 Ngaŋcara clitics	6 Old Indic preverbs	7 Spanish pron. clitics	8 Greek ou= (negative)
	P2	X̄̄	X̄	S	S	S	S	V [-T]	S
	P3	Initial	Initial	Initial	Initial	Final	Final	Final	Final
	P4	Before	Before	After	After	Before	Before	After	After
	P5	Enclitic	Proclitic	Enclitic	Proclitic	Enclitic	Proclitic	Enclitic	Proclitic
In Chapter IV examples:		(52)–(56)	(9)	(1)–(2) (10) (27)–(29)	(60)–(62)	(40)–(45)	(37)	(26) (66)–(67)	(50)

Figure 4.1: Universal Possibilities for Clitics

This strongly suggests that pre-verbs in PIE are Type 6 clitics in certain syntactic configurations, but further detail on word order and on the proclitic nature of PIE pre-verbs is necessary before a more conclusive statement can be made.

It is generally assumed that if a clitic is associated syntactically with a host, that its phonological attachment is with the same host. However, my system allows for leftwards "syntactic" attachment (P4), as in:

[38]

combined with leftward "phonological" liaison (P5), as in:

[39]

so that the surface phonological host, i.e. 'Y' in (39), is different from the structural host, 'X' in (39). This possibility appears as Type 5 in Figure 4.1 and is exemplified in Ngaŋcara, a middle Paman language of Australia. According to Smith and Johnson (1979:6), Ngaŋcara possesses clitics which occur according to the following principles:

> There are two syntactic positions in which bound pronouns can occur. The favored position is cliticized to the last element before the verb; more rarely, they occur encliticized to the verb itself.

Their examples are given in (40)–(45), where =ŋu is the relevant clitic:

[40] ŋila pama-ŋ ŋiŋu
he:NOM man-ERG him:DAT
pukpe-wu kuʔa wa:=ŋu
child-DAT dog give=DAT:3sg.
'The man gave the dog to the child.'

[41] ŋila pama-ŋ ŋiŋu pukpe-wu kuʔa=ŋu wa:

[42] ŋila pama-ŋ kuʔa ŋiŋu pukpe-wu=ŋu wa:

[43] ŋila pama-ŋ kuʔa pukpe-wu ŋiŋu=ŋu wa:

[44] kuʔa ŋiŋu pukpe-wu ŋila pama-ŋ=ŋu wa:

[45] kuʔa ŋiŋu pukpe-wu pama-ŋ ŋila=ŋu wa:

(Smith and Johnson 1979:6–7)

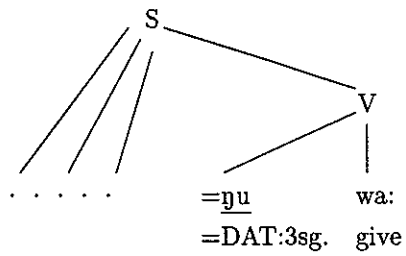
It seems, from Smith and Johnson (1979), that verbs are fixed in S final position. But the fact that Ngaŋcara bound pronouns can cliticize to any constituent, as long as it is immediately before the verb, makes them typologically unique and perplexing for previous accounts of cliticization which allow only verbal clisis or 2P enclisis. However, given P1–P5, Ngaŋcara enclitics can be characterized as follows:

[46] P1: case markers, cross referencing bound pronouns
P2: S
P3: Final
P4: Before or After
P5: Enclitic

An illustration of how examples (40)–(45) are accounted for by (46) follows.

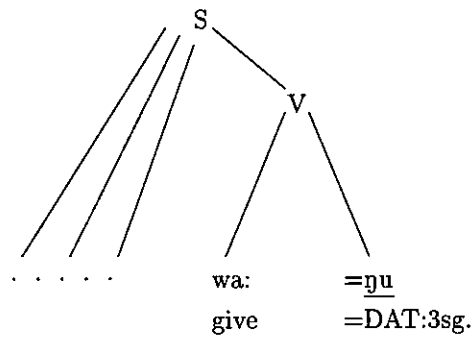
A clitic in Ngaŋcara is identified as a portmanteau of a case marker and cross referencing bound pronoun. Their Domain of Cliticization (P2) is S. For the parameter P3, they attach to the FINAL constituent of P2, namely V. P4 is BEFORE for cases like (41)–(45), in that they occur on the front of the V. Most crucially, they are ENCLITIC along P5. Therefore, although they are syntactically associated with V, they lean phonologically on the word preceding V. This is schematized in (47), applicable to (41)–(45):

[47]



For cases where the clitic attaches to V as in (40), P4 is After as schematized in (48):

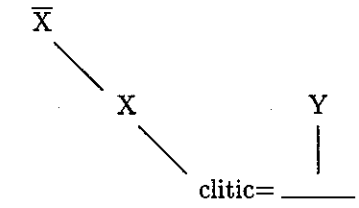
[48]



In (47) they appear as Type 5 in Figure 4.1; in (48) they are in Type 7 position.

Now consider another of the clitic types provided for by the five parameter system, shown as position 8 in Figure 4.1. A clitic of this type would be PROCLITIC (P5), and would appear AFTER (P4), the FINAL (P3) constituent of a given Domain of Cliticization (P2). To give an expansion of Figure 4.1 for position '8':

[49]



At first glance this might seem odd: consider a proclitic attached to the end of a sentence. This would mean that procliticization would have to be across sentence boundaries, an unlikely situation. However, consider an example of a proclitic which does appear in a configuration like (49) and observe what occurs.

In the case of Classical Greek "stranded proclitics" (exemplified in detail in Chapter 5), proclitics at the end of a sentence are accented, as in:

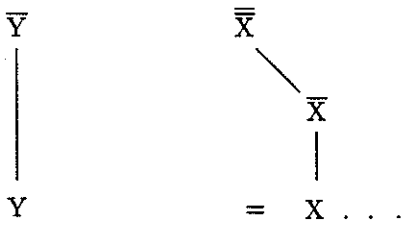
[50] pôs gàr oú ?
for why not?

In (50), the negative *ou*= appears in final position and is accented.

According to Figure 4.1, this is a logically possible position for proclitics. However, due to a rule in Classical Greek which accents any pre-pausal syllable, the proclitic nature of *ou* is obscured. That is, there is no way to tell if the proclitic is truly attached to the following sentence. Given what is known about cliticization and pauses between non-conjoined sentences, it would be improbable, although not impossible, for this type of cliticization to occur. The five parameter system provides another way to look at Classical Greek proclitics, and shows how syntactic attachment to the left is independent of the phonologically rightwards dependence of proclitics.

Now consider the opposite of Type 8 cliticization, that given in position 1:

[51]



where an ENCLITIC attaches to the LEFT of the syntactic host. English Tense Contraction provides an example of this type, as in:

[52] This won't have the effect on us
a. that it will have on you.
b. that it will ___ on you.
c. that it'll have on you.
*d. that it'll ___ on you.

(Bresnan 1971:11)

Bresnan (1971) attempted to account for sentences like (58a)-(58d) by claiming that Tense Contraction is PROCLITICIZATION because it is sensitive to a "gap" on the right. Contra Bresnan (1971), Lakoff (1972) points out that Tense Contraction is clearly phonologically ENCLITICIZATION as evidenced by assimilations such as:

[53]	a. Jack's a fool.	/ j̆æks /	*/ j̆ækz /
	b. Ray's a fool.	/ reiz /	*/ reis /
	c. Tom's a fool.	/ tɔmz /	*/ tɔms /

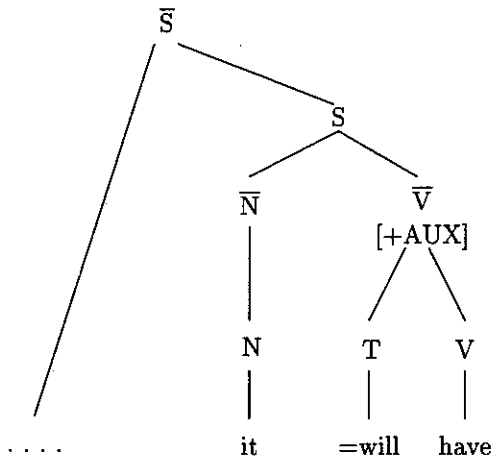
Others have attempted to account for constraints on TENSE Contraction within various frameworks, but a complete discussion is beyond the scope of this thesis. (See King (1970), Zwicky (1970), Baker (1971), Lakoff (1972), Selkirk (1972).)

The problem seems to be the apparently conflicting proclitic-enclitic behavior of Tense elements in English. My analysis in terms of P1–P5 captures this apparent conflict without having to adopt the false aspects of any of the other current analyses. Although further work is needed, the various parameters applied to Tense Contraction might be:

[54] P1: Tensed V [+AUX] (*is, are, would, will, have* ...)
P2: $\overline{V}$
P3: Initial
P4: Before
P5: Enclitic

Take example (52), a partial underlying structure for which is:

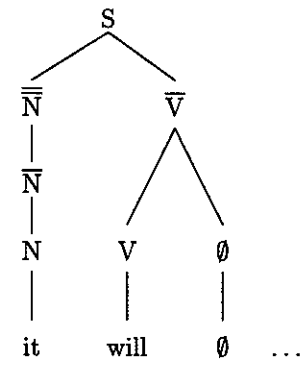
[55]



The structure in (55) corresponds to example (52c), in which the enclitic item (P1) is the tense element *will*; it appears After (P4) the Initial constituent (P3) of the $\overline{V}$ (P2), and is Enclitic (P5) on the preceding item. This type of cliticization is shown on Figure 4.1 in position 1. In (55), all the conditions given in P1–P5 for the Tense Element are met, so cliticization is grammatical.

Contrast (55) with (56) below, where deletion has occurred:

[56]



The structure in (56) corresponds to *(52d). An account of the ungrammaticality of (52d) is revealed in (54). Because of the deletion of *have*, the parameter P3 "Initial/Final" becomes ambiguous.

Since TENSE is the only remaining constituent of $\overline{V}$, P3 might be Final, in which case the conditions of (54) will not be met, and cliticization would be impossible. This brief analysis of Tense Contraction needs further work but is nonetheless suggestive of the types of facts that my analysis should be able to account for in a unified and language independent way. But in order for the analysis to be adequate, it is necessary to examine the constraints imposed on each parameter. This follows in the next sections.

4.4.2 *Constraints on Parameters: Independence of Syntax and Phonology*

The curious fact about clitics is that they seem to be part-word and part-affix. Chapter 1 discusses some of the differing phonological and syntactic properties of clitics and shows how clitics seem to straddle the phonological and syntactic components. Indeed, it is precisely this duality that has captured the interest of linguists.

The system of analysis in P1–P5 captures these properties of clitics in the following way: In the first instance, it is necessary to identify the item to be cliticized (P1). This seems to be a language specific fact about individual lexical items: the copular verb is an enclitic in Beja in certain syntactic constructions, and the copular in English can also encliticize, but not in French or Latin. Thus, in Beja and English, the copula is potentially a clitic, whereas in French and Latin, it is not so marked.

Once given a LEXICAL MARKING, the next fact that needs to be accounted for by a theory of cliticization is the fact that these clitics are constrained in possible positioning, and that these constraints must be stated in SYNTACTIC TERMS. Compare constraints on lexical insertion, also directly dependent on syntactic structure, as contrasted with affix insertion, which is directly dependent on morphosyntactic information. The syntactic aspect of cliticization is captured in the three parameters: Domain of Cliticization (P2), relevant Initial or Final constituent within the domain of cliticization (P3), and Before or After (P4) the designated relevant constituent within the given domain of cliticization.

Finally, comes the distinctive PHONOLOGICAL BEHAVIOR of clitics, i.e. whether they are proclitic and thus phonologically

dependent on the rightwards adjacent item, or whether they are enclitic, and phonologically dependent on the leftwards adjacent item. This is the parameter P5, Proclitic/Enclitic. Thus, by separating out the five distinctive parameters for cliticization, it becomes clear just which aspects of cliticization are lexical, which are syntactic, and which are phonological.

This system provides a way to view cliticization as a SET OF CONDITIONS, some lexical, some syntactic, and some phonological, which can be varied within specified limits, giving different types of cliticization. For example, heretofore it has been assumed that the locus of syntactic attachment will be the locus of phonological attachment. Given a separation of linguistic levels, there is no a priori reason why this should be so. Indeed, by analyzing syntactic behavior (P2–P4) as different from the phonological (P5), an account has been given of the apparently perplexing cliticization facts in Ngaṇcara. However, at the same time, in examining TENSE CONTRACTION in English, it has become obvious that the constraints on the parameters themselves must be specified in more detail.

4.4.3 *Lexical Constraints – P1*

In this section I discuss possible constraints on P1, the identification of the clitic. I have assumed that clitics are marked with a feature in the lexicon, by which they can be identified. This feature can be optional or obligatory. For example, the particle enclitics in Ngiyambaa are obligatorily clitics, as exemplified in Chapter 1, whereas object pronouns in English are optionally enclitics.

Nida (1946:155) observes that:

> There are structurally two basic types of clitics: (1) those that have alternative free forms and (2) those that do not have such forms. The first type of clitics is quite common in English and, in fact, in most languages. The second type is more restricted, but quite abundant in some languages.

This fact about clitics was also noted in Zwicky (1977), who arrived at a similar division between two clitic types: simple clitics, which are (generally) alternative surface realizations of what is intuitively

a single underlying element, and special clitics, which have just that surface realization and no other.

I propose that the two major clitic types can be defined in terms of P1. In Nida's terms, those that have alternative free forms are optionally clitic, and those that do not, are obligatory. Further, I would conjecture that the optional ones are listed along with their strong form variants, which would explain why one has intuitions about clitic derivation: they are side by side in the lexicon.

There seem to be few or no linguistic constraints on the part of speech of items that can be clitics. Chapter 1 gives examples of pronouns (the most common), particles, prepositions, articles, and a few verbs (such as the copula in Beja, verbs of 'saying' and 'thinking' in Classical Greek). So far, I have not come across any lexical nouns or lexical verbs (other than those noted). This appears to be a lexical fact of each language.

Another lexical fact about clitics is the presence or absence of a syllabicity constraint. It would seem, from the majority of my examples that clitics tend to be monosyllabic, but not always. Schachter (1974) gives examples of disyllabic clitics in Tagalog, and Donaldson (1980) contains examples of trisyllabic clitics consisting of a clitic pronoun with inflections.

Another issue concerning the form of lexical entries for clitics concerns the feature [-stress]. It has been suggested (e.g. Pullum 1980) that clitics need to be marked with a feature [-stress] in the lexicon. However, I demonstrate in Chapter 5 that some clitics are stressed on the surface, so [-stress] could not be a feature required of all clitics. However, it may be the case that in certain languages, there is a phonological redundancy rule to interpret the lexical feature [+clitic] as implying [-stress], but this then falls out of the LEXICAL constraints on cliticization and into the phonological. I propose that the lexical feature marking clitics is, simply, [+clitic]. There is no need for a feature [-stress] when one lexical feature (the former) is adequate.

4.4.4 Syntactic Constraints on the Domain of Cliticization

Like P1, the specification of the Domain of Cliticization is both language specific and clitic specific. Observe Figure 4.1 and note the array of relevant nodes for clitic occurrence.

On the Phrasality of the Domain of Cliticization

Figure 4.1 shows that most of the P2's are phrasal nodes (including S as a phrasal node). The only exception to this so far appears to be French and Spanish verbal clisis, which seem to have V as the relevant domain. It would be desirable to place a phrasal constraint on P2, but this may be too strong. However, perhaps the non-phrasal Domain for just Spanish and French clitics gives a clue to why they have been analyzed as verbal features. It is because their syntactic occurrence is not "phrasal affixation" but is closer to "verbal affixation," which is the property of clitics reflected in P2. Perhaps this is a step towards true affixation, where the requirements on clitics in Romance have become morphological requirements. So just as an inflection can occur attached to a verb, so can a clitic. Notice also, that the parameters P3 and P4 are redundant for Romance clitics, indicating that perhaps the need for these parameters is atrophying as the clitics approach affix-hood.

My original idea in this thesis was that P2 was not part of a SYNTACTIC requirement on clitics, but rather was encoded in a LEXICAL FEATURE and was part of the lexical entry. What I noticed was that clitics, like affixes, are never freely inserted in lexical structure; rather, they impose conditions on their hosts. From this, I concluded that clitics must be listed in the lexicon with information to specify in what lexical structure they can appear, i.e. attached to a noun, verb, adjective, etc. I suggested that the form of the lexical subcategorization feature would be:

[57] X Phrase[Z —]

for enclitics, and the converse for proclitics, where the host 'Z' can be a member of any word class, but will be dominated by a specified phrasal class, including S. However, my later work indicates

that the phrasal requirement is purely syntactic in nature. Furthermore, there would be no way to allow variation of the phrasal node, leaving all else constant, such as is necessary for clitics which have more than one value for P2 as in Egyptian Cairene Arabic (see Figure 4.1). In addition, there would be no way to encode a feature into the 'X Phrase' in (57), such as is necessary in Spanish, where the tense of the verb affects whether the clitic is proclitic or enclitic. In any event, the whole approach was mistaken, because the parameter P2 is not part of the lexical item, but rather is part of the set of SYNTACTIC requirements on a surface string.

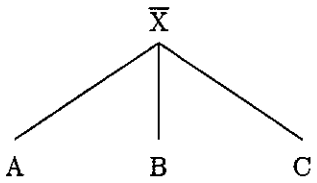
Feature Marking on P2

In two examples so far, a feature requirement is placed on P2. One is for the genitive construction in English, as shown in (33), and the other is for verbal clitics in Spanish, also illustrated in previous sections. The effect of the feature is distinct in each of these cases. In the English genitive construction, if the $\overline{\overline{N}}$ is not marked [+GEN], then the occurrence of the clitic would simply be ungrammatical. However, with Spanish clitics, the feature on P2 actually determines the value of another of the parameters, P5, Proclitic/Enclitic. That is, P5 is a function of the value of P2, unlike the English *'s* which is always Enclitic. Constraints on the features listed with P2, and constraints on their effect on the other parameters are issues remaining for future research.

4.4.5 On the Parameter Initial/Final

Unlike P1 and P2, P3 is not a specified lexical item, nor a specified node, but is positional choice between INITIAL and FINAL. It represents not an open set, but a binary choice. By claiming that the notion Initial/Final is relevant in characterizing cliticization possibilities, I exclude the following types of cliticization: if a node $\overline{X}$ has tertiary branching structure as in:

[58]



where $\overline{X}$ is the Domain of Cliticization, then no clitic can appear attached to B. Clitics can only attach to the initial or final constituent or word within the designated Domain P2. This is a syntactic requirement of clitics, and indicates that the notion 'periphery' is important in cliticization (see the next section on P4, where 'periphery' is further discussed).

Given that P3 involves a binary choice, the question arises: can a language exercise both choices Initial and Final for a given clitic? Consider again the Spanish examples, where clitic positioning depends on the tense of the verb. In this case, P3 is Initial, when the verb is [+tense], but Final when the verb is [-tense]. However, what would happen in the case where there is no branch at all under the domain as shown in (59):

[59]

Would this be the Initial constituent within the Domain $\overline{X}$, or would this be the Final one? Further analysis of clitics in different languages will surely provide an answer to this question.

4.4.6 *Before/After (P4) and its Relation to the Notion 'Periphery' in Syntax*

Like P3, the parameter P4 is a binary choice. This means that like P3, the parameter excludes all choices for clitic attachment, except the equivalent of left-bracket (Before) and Right-Bracket (After). At the same time, the problems raised at the end of the last section concerning a non-branching node apply to P4 as well. The analysis of Tense-Contraction above suggests that where a choice of parameter is ambiguous, as in a non-branching structure, then

cliticization is ruled out. However, there is still no principled reason for claiming this, and so further research is, yet again, necessary.

Concerning the notion 'periphery', the fact that the parameters P3 and P4 involve the extreme edges of an entity (the Domain of Cliticization for P3 and the Node chosen by P3 for P4), indicates that if a movement analysis of clitics is adopted, as opposed to base generation or features, then the rule will probably need to refer to right and left bracket. Schwartz (1972) suggests imposing such constraints on movement rules, and, more recently, Baltin (1978) develops a theory of movement rules which specifies an inventory of "landing sites," that is, possible structural positions in which moved elements may appear. His theory rests on the assumption that left-bracket and right-bracket are basic to the formalism of all movement rules. If movement rules turn out to be necessary to a theory of clitics, then my analysis is compatible with that of Baltin (1978) in the role of 'periphery' in the theory.

4.4.7 *Phonological Constraints*

The parameter P5 is the direction of phonological liaison, that is whether the clitic is Proclitic or Enclitic.

On Excluding Endoclisis

In strictly linear terms, there are three types of clitic: those that occur at the beginning of a word are PROCLITICS, those that occur at the end of the word are ENCLITICS, and those that occur within the word are ENDOCLITICS. The first two terms are standard, but the third was introduced by Zwicky (1977). I have argued in Klavans (1979) that Endoclisis is not a possible clitic type, and have shown how cases of apparent endoclisis are the result of suffixation on enclitics. (I have not found any examples of prefixation on proclitics, which is the other way to find what appear to be endoclitics. This may be a gap in the data.)

At that time, I made no formal distinction between "phonological" endoclisis and "syntactic" endoclisis. To translate this into terms of the present five parameter theory, I did not distinguish between the phonological parameter (P5) and the syntactic ones (P2–P4). In particular, the three parameters Initial/Final (P3),

Before/After (P4), and Proclitic/Enclitic (P5), conspire to prohibit the syntactic and phonological positioning of a clitic within a word or constituent because they place a periphery requirement on clitic occurrence.

Quasi-Enclitics

My analysis predicts that there will be languages in which a distinction exists between PLACEMENT in 2P and ENCLISIS in 2P. This would occur if P5 "Enclitic/Proclitic" were optional, but the other four principles were operant. Just such a case is to be found in what Wackernagel (1892) has called "Quasi-Enklitika." In his review of enclitics in Indo-Germanic languages and dialects, he notes that:

> ... it seems that many particles were optionally enclitic but still occurred in Second Position. (my translation from Wackernagel 1892:37)

In terms of P1–P5, the changes in the actual enclitic words over time and across languages is reflected in P1; P2–P4 give the details of the language specific interpretation of Second Position. Finally, P5 tells in which direction the clitic will lean. When P5 is optional, as for Quasi-Enklitika, the positioning of enclitics, without any attachment to a host, is permitted. This is just one example of how the parameters P1–P5 are useful in characterizing the nature of historical change.

Phonologically Related Clitic Types

Figure 4.1 shows how certain clitics are the same on all parameters except P5, for example the clitics of Type 3 and Type 4. The example I have given for Type 4 is Tepecano, cited in Steele (1977a). She claims that the clitic is both proclitic to the verb and enclitic to the NP:

[60] ndedos n =an= ahohoinda
my:fingers introducer=clitic pronoun=will:shake:them
'I will shake my fingers'

The example is from a short grammar of Tepecano, written in 1916, which raises some doubts as to the reliability of the data.

Nonetheless, I would like to comment on the possible analyses of this type of example, in terms of P5.

If Steele is correct, then the claim is that the clitic pronoun =an= needs two characterizations:

[61]

	Tepecano clitic pronoun =an	an=
P2:	S	$\overline{V}$
P3:	Initial	Final
P4:	After	Before
P5:	Enclitic	Proclitic

These correspond to Type 3, or Second Position clitic type, and Type 6. They are very different types, in fact, different on every parameter.

Alternatively, one might consider that Tepecano clitics are Type 3, but have adopted both values of P5. At the same time, it would also be possible that Tepecano =an= were Type 4, with both values of P5. Consider the implications of each choice. One claims that Tepecano clitics are second position clitics which can also lean to the right. The other claims that Tepecano clitics are verbal clitics, leaning to the left as well as the right. If we consider the origin of the clitics as words in initial position, then Tepecano clitics used to be in position 2 on Figure 4.1, with no value for P5. My hypothesis is that Tepecano clitics have undergone change from Type 2 clitics, with no P5, to Type 4, and then to Type 3. This involves change in only one parameter at each step:

[62] Historical Change and Tepecano Clitics

	Type 2 →	Type 4 →	Type 3
P1:	clitic pronouns	clitic pronouns	clitic pronouns
P2:	S	S	S
P3:	Initial	Initial	Initial
P4:	Before	After	After
P5:	(Proclitic)	Proclitic	Enclitic

Since other analyses have not made the same distinctions that my system does, incremental changes in terms of parameter settings

had not been proposed. However, I suggest that it is a reasonable possibility, and would explain the apparent dual value of P5. I propose that a clitic can have only one, or no, value for P5 at a time, but not both values. I have exemplified clitics of Type 4 in Figure 4.1 with Tepecano an= on the basis of the assumptions set out in (62).

Clitics in Romance

Romance clitics are unusual in the following respect: the setting of the value of P5 as proclitic or enclitic is dependent on the feature specification on P2, as was discussed in the previous sections. What is more common is that a specific lexical item can cliticize only in one direction. For example, Classical Greek proclitics are never enclitic. And when they are in an environment without an appropriate host, they are accented, thus losing their clitic status altogether. In contrast, I showed how a Ngiyambaa enclitic in the incorrect position can never be stressed, and thus causes the sentence to be ungrammatical. Since P5 is a phonological, and not a lexical parameter, there is no reason why it should not vary. Indeed, the property Proclitic/Enclitic is deceptive, because it looks like a lexical property, which it is not. Rather, it is a phonological property characteristic of specified i.e. [+clitic] items in defined syntactic contexts.

Direction of Phonological Liaison

Another phonological fact about clitics and hosts which a theory must account for concerns the direction of liaison. For example, in the Turkish examples with the interrogative enclitic =mi, the enclitic undergoes Vowel Harmony, and appears as any of its phonological alternatives, depending on the host word. That is, the host determines Vowel Harmony for the enclitic:

[63] Vowel Harmony → →
→ →
host =enclitic

Other examples of rules which are triggered from left to right, that is from the host to an enclitic, are DH-Palatalization in Ngiyambaa,

exemplified above; and Portuguese /n/ epenthesis in forms like the following:

[64] sabem + o → sabem + no
they-know it

[65] dão + os → dão-nos
they-give them

In contrast, consider an example from Old Spanish, where the clitic triggers assimilation in the host:

[66] servir + le → serville
to-serve him

[67] tomar + se → tomasse
to-take REFL

In this example, the clitic pronoun determines the phonological shape of the final segment of the host:

[68] ← ← Assimilation
← ←
host =enclitic

There is yet a third possibility in addition to (63) and (68): representing an interaction of both directions in the same form:

[69] Phonological
Process 1 → → →
host = enclitic
← ← ← Phonological
Process 2

Portuguese provides just such examples:

[70] damos + os → damo - los
we give them

[71] posso beber + o → posso bebê - lo
I can drink it

In (70) and (71), the clitic pronouns *os* "III masc. pl.' and *o* 'III masc. sing.' trigger final consonant apocope on the host verb. At the same time, /l/ epenthesis acts on the clitic.

I have shown how the interactions between host and clitic can be complex. Details on the effect of clitics on host and group stress are given in Chapter 5.

4.5 Directions for Further Research

I have presented an analysis of clitics in terms of five parameters, and have shown the value of a theory which separates the lexical, syntactic, and phonological aspects of cliticization. I have shown how the system gives insights on verbal and phrasal cliticization (in terms of P2), how it might increase an understanding of the way clitics come into being via historical change, and how it encodes the notions 'periphery' as an inherent feature of the system. I have also pointed out certain specific areas which require further research, such as constraints on parameters, and the complex phonological facts of cliticization. I believe that further analysis of individual languages will clarify some of the questions I have raised. The five parameter system provides a coherent and constrained framework in which to analyze cliticization.

The five parameter system should be viewed as a step closer to understanding the nature of cliticization, but still more research needs to be done to perfect the details of the theory, and to test the limits of the parameter setting approach.

Chapter 5

On Stress and Cliticization

5.1 Introduction

The preceding chapter of this thesis dealt with general properties of clitics and syntactic placement conventions. It was assumed that clitics are lexically marked, and that they occur under a target node, the domain of cliticization, in accordance with parameters P1–P5. In this chapter, a different aspect of clitic behavior will be considered: that of the relationship between stress and cliticization.

Lack of stress is the most common property characterizing clitics. But when looked at in more detail, subleties in the language specific interpretation of what is meant by "stress" and "lack of stress" emerge. In some languages, clitics are always unstressable, whereas in other languages they may bear stress under certain conditions. In some languages, clitics can affect the stress pattern of a host word, whereas in others they do not. In some languages, clitics are counted in stating word level constraints whereas in others they are not.

In the first part of this chapter, I examine the notion of deep and surface "stressability" as it applies to clitics in varying languages. In the second section, I deal with the host=clitic group and describe

some of the ways that clitics interact with the assignment and adjustment of word and phrasal stress.

Some of the complexities of the problem of defining "stress" were discussed in the beginning Chapter of this thesis. Zwicky (1977) notes, for example, under his section on clitic phonology, that

> Since clitics are, among other things, morphemes with no independent accent, they should show the regular phonological concomitants of a lack of accent. We therefore expect the clitics in a language to undergo the same reductions, deletions, and assimilations, and under the same conditions, as other unaccented syllables in that language. (Zwicky 1977:26)

Zwicky then points out some of the problems with these expectations: for example, full forms in English often reduce to phonologically irregular simple clitics in idiosyncratic ways, as in the much-quoted case of *want + to* giving *wanna*, or *will + not* giving *won't*.

Following his discussion of the peculiarities of the phonology of clitics themselves, is a discussion of the peculiarities of the clitic=host and host=clitic group:

> The most straightforward situation would be if clitic attachment always created genuine 'phonological words', units to which all the relevant (segmental and prosodic) word-internal rules of the language applied, and to which no other rules applied. (Zwicky 1977:28)

Zwicky continues by illustrating how it seems that simple clitics, and some groups, show word internal phonology whereas others do not. Finally he notes that the complexity of the phonology of groups defies explanation in terms of boundary reduction rules, such as those of the form:

[1] # # → # (Zwicky 1977)
→ +

An examination of the phonology of clitics involves looking at both the phonological properties of clitics and the phonological

properties of clitic-host-clitic groups. By phonological properties is meant: (1) rules of word reduction and fast speech (relevant to simple clitics), (2) rules of internal sandhi, (3) rules of external sandhi, and (4) rules of stress. In this Chapter, I have chosen to concentrate on stress for the following reasons.

Lack of stress (or accent) is the defining characteristic of clitics. When all else fails, one can tell a clitic by the fact that it is dependent for its stress (or accent) on an adjacent host item, much as an affix is morphologically dependent on its base. Consider, for example, the above quotation from Zwicky (1977:26) in which clitics are described as "morphemes with no independent accent," or the description of "clitics" in Hyman (1977):

> Many stress languages however are described as having at least some words *lacking a stress* e.g. Kitsai (Bucca and Lesser 1969:13), Saho (Welmers 1952:147) and Seneca (Chafe 1960:21). While it is often pointed out that certain "clitics," i.e. forms which attach themselves to other forms (which in turn take a stress), *do not have an inherent stress*, stresslessness seems to be of greater significance in the above languages. (p. 38) (my emphasis)

Or consider a traditional definition of enclitics for Greek which typically reads like this (from W.H.D. Rouse (n.d.): *A First Greek Course*):

> A few words are used only in combination with others which go before them. These have *no accent*, and are called enclitics. (p. 3) (my emphasis)

It appears, then, that an understanding of the property "lack of stress/accent," one which is in general common to all clitics, is fundamental to an understanding of the other phonological properties of the clitic and of the group. I believe that an analysis of the effect of the cliticization process on stress/accent patterns in various languages, as constrained by language particular stress/accent systems, will reveal a rule-governed pattern underlying the other apparently idiosyncratic phonological behavior of clitics.

5.2 Stressability and Clitics

The quotations above indicate several interpretations of what "lack of stress/accent" can mean. On the one hand, it can mean that clitics are simply destressed versions of stressable items. On the other hand, it can mean that clitics have no inherent stress/accent, i.e. that they can never be stressed/accented and so obligatorily lean on an adjacent word for stress/accent (except perhaps in contexts of linguistic mention).

The difference between these two types can be represented as in (2), the first column showing how some clitics are destressed whereas others are unstressed underlyingly. (Cf. (24) in Chapter 2.)

[2] Stressability of Clitics (to be revised below)

	'stressable'	'unstressable'
deep:	+	−
surface:	−	−

On one criterion, 'stressable' corresponds to what Zwicky has called 'simple clitics' and 'unstressable' to Zwicky's category 'special clitics' (cf. Chart I).

What is meant by 'deep' in (2) is a level I will loosely call "lexical." Just exactly where my 'deep' level in (2) corresponds to other 'deep' levels depends on where lexical insertion is believed to occur, and where word stress assignment occurs. What is meant by 'surface' is very surface indeed, the post-phonological—and probably even phonetic—level. Certainly 'surface' must be: after any structural readjustment rules have applied (Chomsky and Halle 1968:371–2, Selkirk 1972, Pullum 1980), and stress adjustment rules, such as "clash" (Liberman and Prince 1977, Nespor and Vogel 1979) or even-syllable stress rules (Dixon 1977) and so on, have applied. A more detailed treatment of the 'deep' and 'surface' notion in (2) will be given below.

Examples of clitics which are potentially stressed are object pronouns in English as exemplified in Chapter 1 repeated here for convenience as (3) (from Zwicky 1977:5):

[3]	Full	Reduced
He sees her.	[hì síz hɚ̀]	[hì sízɚ]
She met him.	[ʃ̌ì mét hìm]	[ʃ̌ì mérm]

Zwicky (loc.cit.) gives (4) to show how the full form can appear in isolation or under emphasis, whereas the reduced one cannot:

[4] She met <u>him</u>. [ʃ̌ì mèt hɪm {hím / *ɪm / * m̩}]

(Who is it?) Him. [{hím / *ɪm / * m̩}]

Selkirk (1972:97) gives a Clitic Stress Reduction Rule which removes stress from items which have been encliticized to lexical categories in English:

[5] Selkirk 1972 Clitic Stress Reduction Rule (CSRR)

$$V \rightarrow [\text{-stress}] \;/\; X \underset{H}{[} \; \underset{H}{[} \; Y \underset{H}{]} \; C_0 \; \_\_ \; C_0 \underset{H}{]} \; Z$$

where H is not a phrase category.

The assumption is, of course, that these items must be stressed at some level in order to undergo de-stressing by a rule like (5), and then to undergo subsequent phonological reduction by regular stylistic rules associated with casual speech in English.

An example of underlying stressed clitics are object pronouns in Spanish, as given in Chapter 1, such as:

[6] <u>Te lo</u> digo ahora.
'I tell you it now.'

[7] Dí <u>=me =lo</u> ahora.
'Tell me it now!'

The forms *te*, *me*, *lo* in (6) and (7) are labelled 'clitic' primarily due to their inherent unstressability, i.e. they cannot occur as a single (word) utterance, and cannot normally receive emphatic stress.

According to Pullum (1980), clitics in Luiseño are marked [-stress]. The ability to identify a string of unstressed elements is crucial to his arguments for boundary reduction in Luiseño. The key rule in Pullum (1980) is:

[10] X^0 Readjustment

$$\begin{matrix}[& \# & [& W\#] & Q\#] \\ X^0 & & X^0 & & \end{matrix} \rightarrow \begin{matrix}[& \# & [& W] & Q\#] \\ X^0 & & X^0 & & \end{matrix}$$

where X is a lexical category with 0 bars, i.e. N, V, or A, and Q is (as in Halle 1973) a string of unstressed segments.

Note the definition of X. Pullum (1980) argues that Rule (11), along with modified Readjustment Rules from Selkirk (1972), account for the phonological facts of host=clitic groups in Luiseño.

Since the data show that some clitics are inherently unstressed and never can appear stressed, then it is descriptively unnecessary to require that such clitics be stressed and then destressed, such as in English. Indeed, it would be counterintuitive to represent items like Latin *=que*, Polish *=ście*, Turkish *=sa*, or Spanish *=me* as stressed anywhere in the grammar (either in the morphological, phonological, lexical, or any component) with a rule something like Selkirk's to destress them obligatorily.

5.3 Underlying Atonicity

The division between underlyingly atonic and underlyingly tonic clitics as shown in (2) is not always so clear-cut. Consider proclitics in Classical Greek, such as

[8] hōs hóte
'as when'

[9] ek Spártēs
'out-of Sparta'

[10] ou lúei
'he does not loose'

It has been argued (e.g. Sommerstein (1973)) that Greek proclitics are atonic. However, in certain syntactic configurations, namely if a proclitic has no suitable host to lean on, the proclitic may be accented:

[11] theòs hṓs
'god-like'

[12] kakôn ék
'out-of bad-man'

[13] pôs gàr oú
'for why not?'

In these examples, a word which is normally proclitic appears in phrase final position. In (11) the conjunction *hṓs* 'like' follows the noun, whereas normally it precedes, and is proclitic on that noun. Similarly, in (12) the preposition *ék*, which normally precedes the noun it governs and is proclitic on the left-most word in the object NP, follows the noun. Thus, *ék* is "stranded" on the right with no appropriate rightward host to lean on. In (13), the negative *oú*, normally proclitic as in (10) appears in phrase final position. In these examples, proclitics which have no rightwards string adjacent item to serve as host, bear surface accent.

Sommerstein (1973) argues that accentuation in examples like (11)–(13) is due to a rule of Sentence Accentuation by which any pre-pausal syllable, regardless of its lexical status, is assigned an acute accent. He suggests that this rule was so automatic that the acute accent was normally not marked, except where odd, such as on items which are usually proclitic, i.e. usually unaccented. So it seems that some words might be underlyingly unaccented, but can still be given accent by rules of sentence accentuation, causing these normally unaccented clitics to appear accented on the surface. That is, to revise (2):

Figure 5.1: Stressability of Clitics: A Partial View

	a. some stressable clitics	b. other stressable clitics	c. unstressable clitics
deep:	stressed	unstressed	unstressed
surface:	unstressed	stressed	unstressed
(as in)	English object pronouns	Greek proclitics	Spanish object pronouns

More examples of "Stressed Accented clitics" are given below.

Missing from Figure 5.1 is just one logical possibility, namely:

[14] (for Figure 5.1)

d. stressed items	
deep:	stressed
surface:	stressed

which characterizes the behavior of non-cliticized items.

5.3.1 *Proclitics in Classical Greek*

Traditional grammarians such as Moorhouse (1959) state that Greek proclitics are deaccented oxytones, i.e., that they belong in the first column in Figure 5.1, but Sommerstein (1973) has argued that proclitics are simply atonic by nature, that is, that they belong in the second column. A still different approach is taken by Vendryès (1904), who gives evidence that proclitics behave as though they have no underlying accent, but he still allows the possibility that they might have underlying accent by stating that, if proclitics are in fact underlying oxytones, then the accent "n'avait pas la valeur d'un véritable accent aigu." That is, proclitics might have some sort of an accent, but they are not true oxytones.

The reason for the incompatible claims about the underlying accent of proclitics is clarified in the next section of this paper where I look at the interaction between stress/accent and clitic=host groups. In brief, the problem is this: in Classical Greek, accentuation rules and constraints count from right to left to determine when and if the lexically specified accent on a word can or must be moved or changed:

[15] a. Accentuation Constraints (See (8)–(10))

$$\underline{\text{proclitic}} \quad = \quad \overleftarrow{\text{host}}$$

Thus, in Classical Greek, proclitics do not alter the accentuation pattern of the host word, though the proclitic itself may be accented, as shown in examples (11)–(13) above, and (37)–(38) below. In contrast, enclitics can and do affect group accent patterns:

[15] b. Accentuation Constraints (See (33))

$$\overleftarrow{\text{host}} \quad = \quad \underline{\text{enclitic}}$$

Since there is no interaction between proclisis and accentuation, there is no way to test a claim concerning the underlying atonicity of (monosyllabic) proclitics in Classical Greek. Until a test for atonicity of proclitics which does not rest on group accent patterns is devised, then a claim of underlying atonicity is untestable.

Figure 5.1 displays stress possibilities for clitics, but it is not implied that a lexical feature [±stress] is necessary. Instead, stress rules need only refer to the same [clitic] feature already available for potentially cliticized lexical items. (See Chapter 4.)

The issue of underlying tonicity and clitic items has attracted the attention of grammarians for centuries. I will look at just two cases: the underlying tonicity of proclitics in Classical Greek exemplified in (8)–(13) above, and the tonicity of enclitics in Modern Turkish.

5.3.2 *Enclitics in Modern Turkish*

An explanation for the problems of determining underlying tonicity of proclitics in Classical Greek was given in terms of the interaction

between the type of clisis and the type of accent assignment in that language. A parallel explanation for Turkish in terms of the stress patterns of Turkish cannot be given because the facts of intonation and stress in Turkish are very poorly understood.

The common assumption is that Turkish is stress-final (i.e. that word stress is essentially oxytone); Hyman (1977:64) lists Turkish amongst the languages with "dominant final stress" along with various other Turkic languages. However, as noted in Lewis (1967:21) and Hony (1947:vii), Turkish sentence intonation can, and commonly does, vary:

> Group accent and sentence accent, i.e. intonation, both override word-accent so completely that some authorities have denied the existence of word accent altogether. (Lewis 1967:21)

> ... stress is not as powerful as in English, but is much more equally divided and tends to fall on the last syllables as in French. (Hony 1947:vii)

Hyman (1977) notes that Turkish is not unusual:

> It is of course well-known that an intonational contour can be superimposed on (and therefore affect) any kind of accentual system, and indeed any kind of tone system as well. (Hyman 1977:43)

More interesting still is Hyman's observation on the patterns of utterance-final stress:

> ... one characteristic of stress languages which seems to be general is that a stress in utterance-final position will be realized as a HL fall in pitch, rather than as a H level pitch. This fall in pitch has often been attributed to intonation, and the last primary stress of a given grammatical unit can be said to be realized by incorporating an intonational falling pitch in just this fashion. (loc.cit.)

The implication of Hyman's cross-linguistic observation is that perhaps some of the difficulty in determining Turkish word-stress and intonational patterns may well be due to the interplay between

stress and intonation, and the widespread linguistic tendency for utterance final HL patterns.

Turkish enclitics are variously described as enclitic WORDS (Lewis 1967), enclitic SUFFIXES (Lewis 1967), and enclitic PARTICLES (Lees 1961). The basic distinction is between words having both a full and reduced (enclitic) form such as:

[16] a. evlí ise 'if she is married'
b. evlíy=se 'if she is married'

[17] a. arkadaşím idi 'he was my friend'
b. arkadaşím=di 'he was my friend' (from Lewis 1967)

In (16) and (17) the copular word is encliticized to the leftwards adjacent word. The other type is enclitic suffixes:

[18] memnuniyét=le 'with pleasure'

[19] yazár=ken 'while writing' (op.cit.)

In (18)–(19), the suffixes *=le* and *=ken* are never accented, and are said to "throw" their accent onto the preceding syllable. If enclitics (both words and suffixes) are atonic, then what is the explanation for the fact that they have the ability to "throw their accent" onto a preceding syllable? Indeed, the very supposition "throw their accent" is that these words possess an accent to throw.

According to Lewis (1967), there is a real controversy as to whether these suffixed words and suffixes are ENCLITIC or just ATONAL. Evidence that they are enclitic comes from examples like the following, where the addition of the enclitic is neutral as regards the overall stress pattern of the word. Consider a non-oxytone compound, such as:

[20] báşbakan 'prime minister'

which is derived from the words:

[21] báş + bakán
head minister

When the enclitic suffix *=le* is added, the result is:

[22] báşbakán=la

with "the accent before =*la* at least as noticeable as that on *báş*" (Lewis 1967:23). So stress reappears on *bakán* with the addition of the enclitic presumably as a result of accent throw-back.

In Lewis's view, an enclitic by definition, must "throw back" its accent onto the preceding syllable, i.e.

[23] Lewis 1967 Enclitic Test for Turkish

... (syl) (syl) sýl = enclitic

and since this requirement is fulfilled by forms like (18), (19) and (22), then these must be enclitics.

On the other hand, there is some evidence for atonicity. Take, for example, a form like:

[24] sadé 'simple'

[25] sáde=ce 'simply'

where the addition of the enclitic =*ce* causes the word to be stressed like an adverb, i.e. antepenultimately. The word (25) does not fulfill the enclitic test (23). Therefore, Lewis reasons, it is not an enclitic. For =*ce* to qualify as an enclitic, a form like:

[26] *sadé=ce

would have to be grammatical, and it is not. Thus, he concludes, that words like =*ce* must be underlyingly atonal in Turkish.

There are various problems with Lewis's analysis. First, there is no a priori reason why Turkish could not have some atonal enclitics and some underlying tonal enclitics. Second, since the general pattern of Turkish is stress-final, an accentual ambiguity will result from the addition of an atonal form to a stress-final host. Looking back at Lewis's Enclitic Test Format (23), this surface tonal pattern could be the result of (27) or (28):

[27] syl syl sýl + àtonal word

[28] (´)
syl syl sýl + enclitic throw-back

Again, for reasons internal to the language-particular stress/accent patterns, the question of atonicity becomes virtually untestable. Although it must be added that the facts of Turkish are not as clear-cut as Classical Greek, the gist of the non-argument remains the same.

What I have shown in this section is that a decision about the underlying accent of enclitic forms cannot be made independent of the stress/accent properties of that language. In the two languages I have looked at, there seems to be no way to test "underlying atonicity" from the surface facts. The next section turns to examples of "stressed clitics," that is, clitics which appear stressed on the surface.

5.4 Stressed Clitics

The terms "stressed clitics" and "accented clitics" carry a ring of anomaly. The following three sections discuss examples of stressed clitics resulting from the application of rules which assign stress where it did not exist, either because it was removed by a cliticization process, or because the clitics in question are underlyingly atonic. In general there are three types of stressed clitics:

[29] Clitics Stressed by:

1. **Phonological Word Rules**: those which result from a stress rule whose domain is the phonological word, and which blindly assigns stress to a clitic.
2. **Intonational Rules**: those which result from intonational rules assigning stress to the entire phrase, again "blindly," where the peak of that contour happens to be a normally clitic item.
3. **Semantic Rules**: less commonly, those resulting from semantically motivated stress, such as emphatic or contrastive stress.

I have already mentioned an example of the second type from Classical Greek, and will now give other examples.

This section draws on a very interesting paper by Dieter Wanner (1978) entitled "Stressed Clitics" in which he gives examples

of various types of stressed clitics primarily from the languages and dialects of Italy. Wanner shows how closely related languages can vary greatly in the way that stress is assigned to phonological words. Examples from Wanner (1978) are indicated by 'W'.

5.5 Clitics Stressed by Phonological Word Rule

5.5.1 *Greek Paroxytone and Bisyllabic Enclisis*

The most familiar example of a clitic which becomes accented because of word level constraints is from Greek (Smyth 1920, Goodwin 1894, Warburton 1975, Zwicky 1977, Wanner 1978), applicable to both Modern and Classical Greek. When a paroxytone, i.e. a word with an acute on the penult, is followed by a disyllabic enclitic (or by two consecutive monosyllabic enclitics), the paroxytone remains unchanged, but the enclitic retains its accent. This is in contrast to the normal case where the enclitic has no accent (see Goodwin 1894) as in *Kêrúks tis* 'a certain herald' and *phílos tis* 'a certain friend'. The following examples show that the retained accent can be acute as in (30) and (32), or circumflex as in (31), where an acute indicates a rising accent, and the circumflex, a rise-fall.

[30] phíloi tinés 'some friends'

[31] lógōn tinôn 'of certain words'

[32] phílos = tís=ti eîpe 'a certain good friend said something'

According to Goodwin (1894) and Smyth (1920, section 184), patterns such as in (30)–(32) result in order to avoid violation of the famous Rule of Limitation (i.e. to avoid three successive unaccented syllables). Another way to view (30)–(32) is that the "enclitic throw-back rule" would give an ill-formed target accentuation pattern:

[33] Throw-Back Pattern of Paroxytone + Bisyllabic Enclitic

a. hóšt = ěnclític Throw back ⟶

b. hóšt = ěnclĭtic CLASH ⟶

c. hóšt = ěnclĭtic De-Accentuation →

d. hóšt = ěnclític Re-Accentuation

Allen (1968) says that the reason that step (b) in (33) is disallowed is because a high tone must have a fall, which is, in effect, the same claim as CLASH. But Sommerstein (1973) argues that clitics are unaccented:

[34] Sommerstein (1973) on Stressed Enclitics

a. hóšt = ěnclĭtic Pre-Pausal Accentuation

b. hóšt = ěnclític

He claims that the acute on the second syllable of the enclitic is due to a rule by which phonetically unaccented syllables are accented before a pause. From the look of it, Sommerstein's analysis is clearly simpler but there are other facts which make his argument highly controversial (see Aitchison (1975).

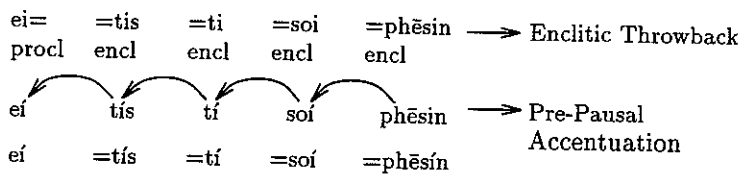
Examples like (30)–(32) represent a fairly clear-cut example of stress which is assigned "blindly" to a clitic by a word level rule, in this case the Rule of Limitation to avoid violation of language specific word level constraints.

5.5.2 *Classical Greek Enclitic Accent Throwback*

A clearer case of accented clitics can be found in Classical Greek. These examples involve cases where an enclitic throws its accent back either onto another enclitic resulting in an accented ENCLITIC or onto a proclitic resulting in an accented PROCLITIC. An example of an enclitic sequence is:

[35] eí =tís =tí =soí =phēsin
'if anyone is saying anything to you' (Goodwin 1894: Sctn 145)

(35) is derived in the following way:



Unlike the cases above which may have been due to pre-pausal sentence accentuation, these examples really are enclitics accented by word level rules. Notice how each enclitic throws its accent to the left, leaving the rightmost one, naturally, unaccented.

Forms like (35) are evidence against Sommerstein's atonicity and Sentence Accentuation analysis. Sommerstein would predict that (35) could be accented as:

[36] * ´ ´ ´ ´ ´

by Sentence Accentuation Principles. But since (36) is ungrammatical, therefore, Sommerstein's analysis is falsified.

Examples of stressed proclitics resulting from proclitic=enclitic sequences are:

[37] én tini 'in someone, something'

[38] eí tines 'if any people (pl., masc. or fem.)'

Normally a proclitic=enclitic sequence obeys the accentuation patterns of a compound word, however, indicating that, at some level, these clitics are in fact words, and not purely atonic hangers-on as Sommerstein (1973) would lead us to believe. For example, in:

[39] a. hṓs=te 'so that'
b. *hôs=te 'so that'

[40] a. toús=de philous 'but the friends' (acc. masc. pl.)
the =but friends
b. *toûs=de 'but the friends' (acc. masc. pl.)

The (b) examples above represent the expected accentuation for a true word=enclitic group, and the (a) examples for word-word

compounds. In (39)–(40), the proclitic and enclitic both act like separate words for accentuation.

Again, the attempt to find a clear-cut case of accented proclitics is thwarted by the very complex facts of accentuation in Classical Greek. But the examples of accented enclitics in (35) and of accented proclitics in (37)–(38) come the closest to providing cases of accented clitics resulting from word-level rules so far.

5.5.3 *Southern Italian Tyrrhenian Dialect Stress Shift*

Wanner (1978) gives examples of clitics stressed by word level rules from a number of "Tyrrhenian" Romance dialects in Southern Italy, Sicily, Sardinia, and Corsica. The essential facts are that: once enclisis has taken place, the entire group undergoes a secondary stress assignment rule, as a group, consisting of host=clitic (=clitic). That is, the stress shift onto the clitic is basically motivated by the word level stress generalizations particular to these dialects. (The full details can be found in Wanner 1978:10–15). According to Wanner, stress shift is optional with only one clitic as in:

[41] guardá=tte (or guárdatte)
'Look out for yourself!'

[42] pórta=te (or portéte)
'Behave yourself!' (adapted from W:12)

and optional with only two clitics on a final stressed verb form:

[43] a. (r)a=mmé=nne
'Give me (some) of it!'
b. (r)á=mme=na
'Give me (some) of it!' (adapted from W:12)

The forms in (41)–(43) still obey the constraint that forbids stress from occurring further back than the third last syllable in the group. However, if the host alone has penultimate stress and is followed by two enclitics, then this constraint will not be obeyed. Thus, we find forms like:

[44] tòrna =mé =llo
'Give it back to me!'

[45] ràten =gé =lle
'Give us (some) of it!'

[46] sposàre =sé =lla
'to get married to her' (adapted from W:12)

In (44) and (45) the imperative forms are followed by two enclitics. In (44) the clitic *=me* 'me DAT' and in (45) the clitic *=ge* 'us DAT' bear primary stress. In (46) the infinitive *sposare* 'to marry (reflexive)' is followed by the two enclitic pronouns, the reflexive *=se* and the dative *=lla* 'to her'; the reflexive clitic *=se* bears primary stress in (46).

Wanner's discussion of these examples is as follows:

> The shifted stress will always be the main stress; the original stress location in the host may be marked by a secondary stress, in particular if the distance to the new main stress spans one intermediate unstressed syllable, as in (21) [my (43a)]. The constant property of all stress shifted host plus clitic groups is the lengthening of the consonant of the last clitic, i.e. the consonant separating the second last from the last syllabic nucleus. This lengthened consonant has the effect of closing the second last syllable so that the open penultimate constraint can be viewed as preventing third last stress placement in the entire group. At the same time the single consonant of the unchanged groups allows the third last stress of such combinations to stand. (Wanner 1978:12)

The examples given in (41)–(46) are very clearly a result of the application of word stress rules on the host=clitic group, which apply "blindly," i.e. without being sensitive to clitics, thereby assigning them stress.

5.6 Clitics Stressed by Intonational Rules

I mentioned above the observation in Hyman (1977) that intonational patterns commonly superimpose themselves on, and thus

over-ride, word stress and accentual patterns. This general phenomenon of "intonation over-ride" can affect clitic accentuation as well.

In this section I look at two examples of stressed clitics resulting from the fact that the peak of an intonation contour falls on clitics in French (from Wanner 1978) and in Hixkaryana (from Derbyshire 1979 and personal communication). In both cases, the language has over-riding sentence final intonation, causing, under certain conditions, an S-final clitic to receive sentence stress.

5.6.1 *Modern French Stressed Clitics*

Modern French is characterized by a prominent phrase-final stress pattern, such that the last full vowel of the last word in a phrase is normally the peak of the intonation contour. Thus, a stressed clitic results if that peak happens to fall on an enclitic pronoun. In French, an enclitic pronoun will be phrase final in an affirmative imperative sentence, such as:

[47] allons, montre=le=nous
=lui
=leur
'Now, show it to us/him, her/them!'

[48] mais regardez=vous
=les
=la
'But, look at yourself/them/her!'

[49] allez=y 'Go on!' (based on Wanner 1978:5)
=vous=en 'Go away!'

Where the intonation peak falls on the reduced vowel ə, Wanner claims (following Cornulier 1977:174n.43) that the enclitics show a superficial phonetic vowel strengthening, presumably under stress, as in:

[50] *dis=me ... dis=moi ...
'tell me ...'

[51] *tais=te tais=toi
'shut up!'

[52] *dis=le 'dis=le [dilœ] (based on Wanner 1978:5)
'say it!'

Although the forms *=moi*, *=toi* look as though they are strong form pronouns, Wanner argues that they are not. His argument goes as follows:

> While *nous* and *vous* offer no evidence one way or another, *la*, *les*, *lui*, *leur*, do not switch to the predicted strong *elle(s)*, *eux* (or even *à elle(s)*, *à eux* for the IO) but retain their clitic shape adding only stress to their full vowel ... under phrasal prominence, this vowel will turn into a full representation. (Wanner 1978:6)

This same position is taken by Schane (1965:111–4). Herschensohn (1980:207) also argues that clitics in phrase final position receive '2' level stress; in her system, there are three degrees of phrasal stress: '3' for unstressed, '2' for (phonological) word stress, and '1' for (phonetic) breath group stress.

Examples (47)–(52) illustrate stressed clitics resulting from the treatment of clitics as word final morphemes by the phrase final intonation assignment principles of French. This would put French clitics in column (b) of Figure 5.1 above. I now turn to another example of intonationally induced stressed clitics, from Hixkaryana.

5.6.2 *Hixkaryana Stressed Enclitics or 'Bound Words'*

Hixkaryana, a Carib language, is strictly suffixing, with an underlying OVS word order (Derbyshire 1977). The following facts are from Derbyshire (1979) and from personal discussion.

Hixkaryana contains a set of particles which are non-inflected, non-derived words. These can occur following words of any class (except what Derbyshire calls "ideophones," that is, words which are outside the "normal" language system, such as onomatopoeic words, grunts, groans, and the like). Particles are phonologically bound to the leftwards adjacent word. They typically begin with consonants and consonant clusters which are disallowed in word

initial position, indicating their bound character. Derbyshire calls these particles 'bound words' or 'associatives'. Since at this point I am not sure if there is any non-trivial distinction between 'bound words' and 'clitics', for the sake of internal consistency, I will refer to these bound particles as enclitics. Accordingly, in all examples, I have added '=' markers where appropriate.

A Description of Hixkaryana Enclitic Words

Consider the following example:

[53] wayamn =txko yon-ye-koni =ymo =rma =hati
turtle =dimin 3S-30-was-eating=aug=same ref=hearsay
'He (jaguar) was still eating the poor little turtle.'

The (53) analysis of based on Derbyshire (1979) is as follows: The first two 'words' form a noun phrase, *=txko* being a postpositional particle that never occurs as a free form, with an initial cluster [tʃk] that is not permitted in free forms. The last four 'words' form a verb phrase, with three postposition particles that never occur as free forms. Both *=ymo* and *=rma* also contain initial clusters [ym] and [rm] not permitted in free forms. There is no potential for pause (in normal speech) between the head word and the particle, or in sequences of particles. Intonation, stress, and vowel length operate in terms of the whole sequence (head and particles), and not on the individual components. All the phonological evidence suggests that the X=enclitic sequences are single words and thus that (53) consists of only two words.

Sequences of two or more particles frequently occur in a single phrase. They can be divided into three main groups on the basis of function and position of occurrence in particle sequences: MODIFYING particles (such as *=txko* and *=ymo* in (53)), DISCOURSE particles (such as *=rma* in (53)), and VERIFICATION particles (*=hati* in (53)). Modifying particles, in general, modify a noun, although they can occur attached to verbs, in which case Derbyshire's analysis regards them as having undergone noun deletion. The phrase *wayamo txko* 'turtle=diminutive' is an example of a modified noun, and the phrase *yonyekoni=ymo* '3S/30-was-eating=augment' 'was still eating (up)' is an example of a modifying article following a verb—but the verb carries nominal agreement markers so there is

still a trace of the noun encoded in the verbal form. Discourse particles attach freely to words of any class; they normally occur between the modifying and verification particles, and they serve the function of relating the host to other parts of the discourse. Verification particles express the attitude or relationship of the speaker to the proposition, as seen in (53) *=hati* 'hearsay marker'. They are last in a sequence.

Comparison of Hixkaryana and Ngiyambaa Enclitic Particles

I have given a brief introduction to the types of bound particle in Hixkaryana, showing how they can attach to words of any class and how they exhibit internal ordering constraints. To give a fuller picture of these enclitics, I will compare the Hixkaryana phrase final enclitic particles with the 2P enclitic particles in Ngiyambaa, considering in particular Clitic Positioning and Clitic Ordering Constraints.

Like those in Hixkaryana, Ngiyambaa particles can attach to words of any class (N, V, Adj), although Ngiyambaa enclitics must be attached to the FIRST not the LAST word in the phrase. This difference is reflected in P3 in (54):

[54] Enclitic Particles in Ngiyambaa and Hixkaryana

	NGIYAMBAA	HIXKARYANA
P1:	particles	particles
P2:	clause	phrase
P3:	initial	final
P4:	after	after
P5:	enclitic	enclitic

In addition to the difference in P3, another (minor) difference is that the Domain of Cliticization for Ngiyambaa is the syntactic clause (Donaldson 1980), whereas for Hixkaryana it is the phonological phrase (Derbyshire 1979). Both languages are strictly suffixing so the difference in their placement cannot be attributed to their gross morphological typological features.

In both Ngiyambaa and Hixkaryana, internal ordering constraints obtain for particle enclitics, and in both languages similar semantic principles seem to determine particle order:

[55] Enclitic Particle Order
in Ngiyambaa (Ng) and Hixkaryana (Hix)

Ng:	host =	modifying	> discourse >	verification
Hix:	host =	constituent modifiers Group 1	S modifiers Group 3	speaker attitude, knowledge, evidence Groups 4,2,5

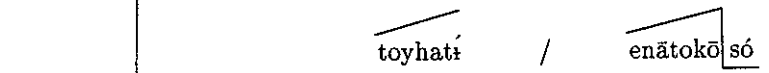
In particular, notice how constituent modifiers precede sentence and discourse modifiers, which in turn precede speaker attitude enclitic particles in both languages.

Hixkaryana Stress and Intonation Assignment

The stress rule may be stated in the following way: primary stress occurs on the PHRASE-FINAL SYLLABLE in connected discourse, and in isolated utterances on the penultimate syllable of the phrase if it is [+strong], otherwise on the final syllable. The feature [strong] is a syllabic feature related to openness and length of a given vowel. Syllables are [+strong] if they are [-open], or if they are [+open] and [+long]. All other [+open] syllables are [-strong].

After primary stress applies to the phonological phrase, secondary stress is assigned to all other [+strong] syllables that occur to the left of the primary stress in the phrase. After Stress Assignment, intonation patterns, of which there are primarily two, refer to the PHONOLOGICAL PHRASE. This is illustrated in (56):

[56] toy =hati enatokoso
3S-go-dist.past=hearsay to-the-edge-of-the-village
'He went to the edge of the village (into the bush).'



The first pattern is NON-TERMINAL intonation which is realized by a gradually rising pitch which continues to rise, or levels off, on the last syllable of the phrase. The second pattern is TERMINAL

intonation, that is, a gradually rising pitch through the phrase with a fall on the last syllable. In general, terminal intonation occurs sentence-finally or sentence-cluster-finally.

Having given a brief description of Hixkaryana bound words and Hixkaryana stress and intonation patterns, the conclusion is now obvious, and in fact, has been revealed in (56). In (56), the verificational enclitic particle *=hati* 'hearsay' receives both primary phrasal stress and also is the highest tone syllable in the phonological phrase as determined by the phrasal intonation patterns. It is now clear how the conditions which cause stressed enclitics in Hixkaryana are essentially the same as those given in French.

Consider a slight variant of (53), WITHOUT the final hearsay particle but WITH a different verification particle, *=na* 'uncertainty':

[57] wayamn =txki yon-ye-koni =ymo =rma =na
turtle =dim 3S-30-was-eating=aug=same ref.=uncnty
'It is uncertain that he (jaguar) was still eating the poor little turtle.'

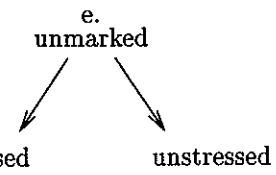
Phrase final primary stress would fall on the [o] of *=txko*, and the [a] of *=na*. Intonation patterns for (57) would look like:

[56′] waymn =txkó yonyekoni=ymo=rma =ná

Here are clear cases of stressed enclitics.

Stress assignment in Hixkaryana is not tied to the lexical item, and is very strictly phonologically conditioned by the phonological phrase. It would thus appear that the most economical way to describe Hixkaryana would be to have all lexical items, bound or free, unmarked for stress, and to take Stress as a late rule whose domain is the phrase. Adding this possibility to Figure 5.1 would give:

[58] (for Figure 5.1)



as in: Hixkaryana phrase final enclitics — Hixkaryana non-phrase final enclitics

A fuller picture of the stressability of clitics is given in Figure 5.2.

5.7 Clitics Stressed by Semantic Rule

Although clitics are normally phonetically unstressed, I have shown how examples of phonetically STRESSED clitics from word-level and phrasal phonological processes are not uncommon. However, it is rare for a clitic to appear stressed for semantic reasons, i.e. under emphasis or contrast. More commonly, clitics correspond to stressable emphatic free forms, such as English *him*/ˈəm.

5.7.1 *Emphatic Stress and Cliticization*

Wanner (1978) notes a rather obvious but nonetheless important point about the relation between semantic stress and simple clitics. Since many clitics are merely reduced unstressed versions of a word, with no special movement from their normal position, if these clitics were to be stressed, they would not be clitics. So, Wanner notes, if a potentially cliticizable word, such as the English object pronoun *him* is to receive semantic stress, as in:

[59] get him /germ̩/

[60] get HIM /get°/ / hɪm/

then cliticization of that word will obligatorily be blocked by the presence of stress on it:

[61] get HIM */germ̩/

Figure 5.2: Stressability of Clitics: A Full View

This observation about English object pronouns can be applied to ANY 'simple' clitic, that is to any clitic which seems to be dependent on lack of stress for cliticization. If stressed, the item would simply no longer be cliticizable. Other examples like (58)–(61) are pronominal clitics in Ngiyambaa, Diyari, Walbiri, and most Australian languages (see Wurm 1972); Quechua focus marker *ari/=ri*, and English Tense Contraction.

However, in some cases there is no stressable free form corresponding to the clitic. One example of this type is the set of Ngiyambaa particle enclitics, which are never stressable under any circumstances. There is no way to put such particles in 'focus', i.e. in first position, as shown in (62)–(63):

[62] ŋindu =bani girbadja mamiyi
you+NOM=TOPIC ISOLATOR kangaroo catch+PAST
'As for you, you caught a kangaroo (first).'

[63] *=bani ŋindu girbadja mamiyi.

Clearly, Ngiyambaa particle enclitics belong in Figure 5.1(c)

5.7.2 *Turkish Stressed Enclitic Suffixes*

The general rule in Turkish is that stress falls on the syllable preceding the interrogative enclitic suffix *=mi*, or its different variants (according to the principle of Vowel Harmony, i.e. *=mu*, *=mi*, *=mü*, *=mı*), as in:

[64] gelecék=mi 'Will (s)he come?'
come-FUT/3sg=Q

[65] gördǘ =mü 'Did (s)he see?'
see-PAST/3sg=Q

[66] gittí =mi 'Did (s)he go?'
go-PAST/3sg=Q

The same holds for the enclitic suffix *=iyor*, as in:

[67] gél=iyor '(S)he is coming.'
come=PRES.CONT/3sg

[68] bák =íyor '(S)he is looking.'
look=PRES.CONT/3sg

This rule is not rigid, however. For example, in forms like (67)–(68), the stress can occur on the penultimate syllable, as in (69)–(70), or on the antepenultimate, as in (71)–(72):

[69] gel =íyor

[70] bak =íyor

[71] erkén - den =mi '... from early on?'
early from =Q

[72] támam =mı 'really?, is that okay?'
correct=Q

When words like (67)–(68) are followed by the interrogative enclitic suffix *=mi*, illustrated in (64)–(66) the normally enclitic *=iyor* can be stressed:

[73] gid =iyór =mu 'Is (s)he going?'
go=PRES.CONT/3sg.=Q

[74] gel =iyór =mu 'Is (s)he coming?'
come=PRES.CONT/3sg=Q

Examples (73) and (74) show how a normally enclitic suffix, *=iyor* can be stressed when followed by the enclitic interrogative *=mi*. Notice that Vowel Harmony has applied, giving *=mu*. Stress can also appear on the first syllable of *=iyor*, as in:

[71′] gid =íyor =mu

[72′] gel =íyor =mu

A more complicated example of the same phenomenon is given in (75):

[75] oku =tún =mu -ydu
read-cause=PAST+2sg. =Q - PLUPERF
'Had you caused ('them' understood) to read (it)?'

In this case *=tun* is the enclitic suffix, which is stressed because of the interrogative enclitic *=mu*. Without the clitic, (75) would be stressed as:

[73′] okú-t=tun

In (73′), the enclitic person marking suffix *=tun* is unstressed, as normal, so the host word retains final stress.

Under certain discourse conditions, the normally unstressed person-marking enclitic suffix can be stressed. Consider, for example (76), which was elicited from a native speaker in conversation (from Baldwin, personal communication):

[76] hangi dilleri bil =iyór?
which languages know/PRES.PROG.3sg
'Which languages does (s)he know?'

In this case, emphasis falls on the final syllable, which is stressed, regardless of the fact that it is normally enclitic and unstressed. This is a clear case of an enclitic suffix which is stressed by semantic rule.

Accentuation in Turkish is notoriously variable. This flexibility might account for the fact that some Turkish enclitics can be stressed under emphasis. At the same time, semantic stressing of enclitics is highly constrained.

5.7.3 *Old Spanish*

Menendez Pidál (1962) notes that in Old Spanish, an object pronoun could be emphasized in an imperative, as in:

[77] Levánteté
'Get yourself up!'

[78] Entiéndemé
'Understand me! (lit.) Hear me!'

Green (1976) observes that between Archaic and Medieval Spanish, Spanish pronoun objects were not strictly bound to the verb and were not fixed in position. Indeed, Modern Spanish clitic order was not securely established until c. XVIth century, when pronouns

began to cluster around the verb. Green conjectures that, at that time, the "verb's magnetic pull on sentence stress" caused these verbal clitics to become phonetically weak, and eventually unable to accept stress in Modern Spanish.

These examples from Spanish and Turkish indicate that there are cases of clitics which remain cliticized under stress, when that stress is the result of emphasis or contrast. In terms of Figure 5.1, Spanish clitics originally conformed to Figure 5.1(b) and moved to Figure 5.1(c).

To sum, a consideration of the feature stress and its relation to cliticization naturally raises the following question: what is the criterion for CLITICS? If it is not, as is often said, lack of stress, then what is it? This section has shown that phonetic lack of stress is not a strong enough criterion for defining clitics. Nor would a phonological account of clitics as [-stress] suffice. This supports the analysis of cliticization as a syntactic phenomenon, with certain phonological consequences.

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