

## 23. Linguistics

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The ultimate objective of our research is to gain a better understanding of man's mental capacities by studying the ways in which these capacities manifest themselves in language. Language is a particularly promising avenue because, on the one hand, it is an intellectual achievement that is accessible to all normal humans and, on the other hand, we have more detailed knowledge about language than about any other human activity involving man's mental capacities.

Scientific descriptions of language have for a very long time followed a standard format. A number of topics are almost invariably discussed; for example, pronunciation, the inflection of words, word formation, the expression of syntactic relations, word order, and so forth. Moreover, the manner in which these have been treated has also been quite standard. While traditional grammars have many shortcomings, their great practical utility is beyond question; generations of students have acquired adequate command of innumerable languages with the help of grammars of the standard type. A plausible inference that might be drawn from this fact is that languages are somehow not very different from one another and that the traditional standard format has succeeded in capturing essential aspects of what all languages share in common. Accordingly, much of the research of the group has been devoted to studying the common framework that underlies different languages, the general principles that are exemplified in the grammar of different languages. Results strongly indicate that this assumption is indeed correct as far as the linguistic evidence is concerned.

The preceding discussion leads quite naturally to the question, "What evidence from outside of linguistics might one adduce in favor of the hypothesis that all languages are constructed in accordance with a single plan, a single framework?" It seems to us that the most striking evidence in favor of the hypothesis is, on the one hand, the rapidity with which children master their mother

tongue, and, on the other hand, the fact that even a young child's command of his mother tongue encompasses not only phrases and utterances he has heard but also an unlimited number of phrases and utterances he has not previously encountered. To account for these two sets of facts, we must assume that in learning a language a child makes correct inferences about the structural principles that govern his language on the basis of very limited exposure to the actual sentences and utterances. In other words, we must assume that with regard to matters of language a child is uniquely capable of jumping to the correct conclusions in the overwhelming majority of instances, and it is the task of the student of language to explain how this might be possible.

A possible explanation might run as follows. Assume that the human organism is constructed so that man is capable of discovering only selected facts about language and, moreover, that he is constrained to represent his discoveries in a very specific fashion from which certain fairly far-reaching inferences about the organization of other parts of the language would follow automatically. If this assumption is accepted, the next task is to advance specific proposals concerning the devices that might be actually at play. The obvious candidate is the theoretical framework of linguistics for, while it is logically conceivable that the structure of language might be quite distinct from that of the organism that is known to possess the ability to speak, it is much more plausible that this is not the case, that the structures that appear to underlie all languages reflect quite directly features of the human mind. To the extent that this hypothesis is correct — and there is considerable empirical evidence in its favor — the study of language is rightly regarded as an effort at mapping the mysteries of the human mind.

The research conducted by the linguistics group has almost from its inception been an integral part of the M.I.T. Ph.D. program in linguistics, which at present is housed in the Department of Linguistics and Philosophy. Many of the results obtained by the group were first presented by faculty or graduate students as part of a regularly scheduled class or are to be found in papers or dissertations written by students in partial fulfillment of different requirements for their Ph.D. degrees. Since dissertations in linguistics often remain unpublished or are published only after considerable delays it has been decided to publish abstracts of the dissertations accepted during the year 1983 in the present RLE Progress Report. It is our plan to publish dissertation abstracts in each subsequent Progress Report.

During 1983 seven dissertations in linguistics were accepted by the Department of Linguistics and Philosophy. Of these, one is in phonology, two deal with the interaction between syntax and word formation, whereas the remaining four concern various problems in syntactic theory viewed from the vantage points of the theory of government and binding (see N. Chomsky Lectures on Government and Binding (Foris 1981)) and lexical functional grammar (see J. Bresnan, The Mental Representation of Grammatical Relations (M.I.T. Press 1982)).

## Aspects of Warlpiri Morphology and Syntax

Jane Helen Simpson

Submitted to the Department of Linguistics and Philosophy in  
April 1983, in partial fulfillment of the requirements for the degree  
of Doctor of Philosophy

### Abstract

I present a fragment of Warlpiri grammar, within the framework of Lexical-Functional Grammar (LFG), focusing on the morphological and syntactic representation of the relations between arguments and argument-taking predicates. In Chapter 2, I discuss the assignment of grammatical functions to arguments within finite clauses headed by verbs or nominals. I argue for a rule which assigns grammatical functions freely to the daughters of S. This rule is the source of free word-order in Warlpiri. I also argue for a rule allowing an argument-taking predicate to introduce a null pronominal for any grammatical function which is linked to an argument of that predicate. This rule is the source of zero anaphora in Warlpiri.

Chapter 3 shows that case-suffixes have two main uses: to indicate that a nominal bears a particular grammatical function, such as SUBJECT, or that it is an attribute of another argument, and to act as an argument-taking predicate analogous to an English preposition. To preserve the *Lexical Integrity Hypothesis*, this last use requires the assignment of grammatical functions within the morphology, as part of the word-building process. I show that this assignment allows an account of the unusual phenomenon of double case-marking.

Chapters 4 and 5 treat the use of nominals as secondary predicates. The existence of discontinuous nominal expressions marked with the same case-suffix is shown to follow from independently needed rules. I claim that nominal secondary predicates are normally independent adjuncts, rather than subcategorizing arguments, as in English. A striking illustration of this is provided by the great freedom resultative attributes in Warlpiri have, compared with their English counterparts.

In Chapter 6, I examine the use of nominalized verbs, action nominals, and complementizer suffixes as secondary predicates. Such clauses have null pronominal SUBJECTs which bear case, suggesting that they must be *anaphorically* controlled. I show that the properties of complementizer suffixes can be represented in the same way as the properties of case-suffixes, with the exception that complementizer suffixes specify the grammatical function of their controllers. I present a classification of Warlpiri complementizer suffixes, in terms of their controllers and their tense properties, including a discussion of clauses with controlled OBJECTs.

Thesis Supervisor: Kenneth Locke Hale

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## Syntax and Word Formation

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Submitted to the Department of Linguistics and Philosophy on  
May 23, 1983 in partial fulfillment of the requirements for the Degree  
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### Abstract

This dissertation concerns the morphophonological alternation of lexical items, determined by syntactic position. It considers three types of inflection, positional allomorphy and certain examples of phenomena collectively called "contraction", and argues that the notion of lexical insertion into d-structure, underlying many current syntactic theories, has difficulty in accounting for these cases. The difficulty is that the variation of forms for particular syntactic contexts is often a reflection of certain post-d-structure syntactic operations, such as move-X. Lexical insertion into d-structure occurs too early to be able to consistently insert the proper alternate for a given construction.

I argue that the lexical insertion concept conflates two independent processes: the projection from the lexicon of the categorial information composing the phrase structure of the sentence, and the phonological realization of the lexical items constituting the sentence. I propose a model of grammar incorporating the Government-Binding syntactic framework combined with the Lexical Phonology model of the lexicon. This model replaces the traditional notion of lexical insertion with the processes of Categorial Construction and Phonological Insertion. Phonological Insertion occurs after s-structure, i.e., after the syntax has completed its rearrangement of the base structure. In this way, the appropriate members of phonologically alternating items can be identified for a given syntactic context.

I also introduce two types of "incorporation" processes within the grammar. Merger occurs at s-structure, combining the grammatical features of two independent lexical items into a single composite set of features. Merger underlies the inflection phenomena studied here. Fusion takes place at PF and has access to both the grammatical and the phonological features of the words it affects. Fusion is responsible for the contraction data examined. Both processes explain the alternation of strings of items in one context with single items in another context by deriving the "incorporated" form from the base-generated string.

The model of grammar combining merger and fusion, along with Categorial Construction and Phonological Insertion, accommodates the alternation data in a natural way.

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## Tone in Lexical Phonology

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Submitted to the Department of Linguistics and Philosophy on  
May 27, 1983 in partial fulfillment of the requirements of the Degree  
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### Abstract

This thesis examines certain issues of tonal phonology within the theory of lexical phonology. Tonal phenomena require the enrichment of the lexical framework to include a post-lexical phonetic component. This component is shown to play a crucial role in accounting for the array of phenomena known as downdrift/downstep.

By separating phonological processes from phonetic processes, and by distinguishing between two classes of phonological processes — namely, those that apply lexically and those that apply post-lexically — we move towards an understanding of why particular tonal rules exhibit the properties that they do. For example, phonological constraints on autosegmental linkings may hold of rules applying lexically, but not of rules applying post-lexically — or such constraints may hold of rules applying lexically and post-lexically, but not phonetically.

The role of underspecification in tonal phonology is investigated. It is proposed that when rules of linking, spreading, etc. have not supplied any given tone-bearing unit with a tone, then a tonal autosegment is assigned by universal default rules. It is proposed that such universal default rules cannot be extrinsically ordered with respect to language-specific phonological rules. Once their allocation to the lexical, syntactic or phonetic component has been determined, the ordering of default rules is predicted by general principles.

Central to the approach taken in this thesis is a revised set of tonal association conventions, where spreading of tones onto free tone-bearing units is not automatic. Spreading takes place by language-specific rule only. A number of the consequences of this revision are investigated. In particular, it is shown that accentual diacritics can be eliminated as a device for determining the location of tonal melodies.

As a final theoretical point, it is shown that the notion of "extrametricality" is required for tone, as well as for stress. Moreover, it is shown that "extrametrical" tonal constituents obey the same "Peripherality Condition" that has been proposed as a constraint on extrametricality in stress systems.

The evidence presented in this dissertation is drawn from a number of languages, including the following: Dschang-Bamileke, Margi, Tiv, Tonga and Yoruba.

Thesis Supervisor: Paul Kiparsky Title: Professor of Linguistics

## The Syntactic Forms of Predication

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Submitted to the Department of Linguistics and Philosophy on  
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Degree of Doctor of Philosophy in Linguistics

### Abstract

In this dissertation I propose a rule of predicate-linking, which accounts for the distribution of non-argument maximal projections. These XPs are considered predicates, and are treated as one-place syntactic functions, requiring completion, or saturation. This saturation is achieved by linking each predicative XP to an argument XP, its syntactic subject. "Subject" is always defined relative to a particular XP, and not as "subject of an S". The predicate-linking rule, which is a condition on well-formedness at S-structure, defines the syntactic conditions under which such linking takes place. There are two major advantages of representing S-structure in terms of syntactically defined subjects and predicates. In the first place, it allows us to account for constraints on phrase-structure not subsumed under X-bar theory. In particular, the phrase-structure rule  $S \rightarrow NP\ INFL\ VP$  becomes redundant, and the occurrence of both small clause and main clause predicates is accounted for by the same principle. The predicate-linking rule should be seen as complementary to the theta-criterion; the latter is a constraint on the distribution of argument XPs, whilst the former is a constraint on the distribution of non-argument, or predicative XPs. In the second place, this representation makes available a simple algorithm which maps from S-structure, via LF, to the semantic component, using syntactic information to build a semantic representation in which semantic subject-predicate relations are encoded. Chapters III and IV of this dissertation discuss how it is ensured that a semantically appropriate argument is the subject of a particular XP. We see that there are general lexical principles which dictate that certain thematic arguments will always be interpreted as the subject of the maximal projections of the lexical heads which select them. We also see how the interaction between the lexicon and the syntactic and semantic components accounts for the asymmetries between subjects and objects. Chapter IV argues that the movement of arguments (i.e. cases where the trace left by Move- is A-bound) and the insertion of pleonastics are syntactic mechanisms which have the effect of providing subjects for predicates which are not assigned one by lexical principles. Chapter V distinguishes between two forms of syntactic predicates: primary, or clausal predicates, and secondary predicates, or small clauses. Chapter VI analyzes the structural properties of NPs and S's, and suggests why, unlike the other maximal projections, these XPs which may be predicative, may also be, and in most cases are, theta-marked arguments.

Thesis Supervisor: James Higginbotham

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## Complementation in Moroccan Arabic

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Submitted to the Department of Linguistics and Philosophy on  
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degree of Doctor of Philosophy in Linguistics

### Abstract

This dissertation presents an investigation of the phenomenon of complementation in the syntax of Moroccan Arabic, a language which has not been the subject of extensive research in theoretical syntax.

In particular, the present study examines a construction which I have termed "Matrix-Object Dislocation." This construction is similar to Left-Dislocation, in that the interpretive operation in both constructions is the same, namely anaphoric binding. Matrix-Object Dislocation differs from Left-Dislocation, however, in that, with the former, an element dislocated from a closed complement appears in the position of object of the matrix verb, while with Left-Dislocation the dislocated element does not occur in the domain of any verb.

Chapter I constitutes an introduction to the syntax of simple sentences in Moroccan, presented within the theoretical framework of Lexical-Functional Grammar (LFG) of Bresnan (1982a,b,c) and Kaplan and Bresnan (1982). Chapter II is a discussion of Moroccan complex sentences, and together Chapters I and II provide the theoretical assumptions and details of Moroccan grammar upon which the work in the final two chapters is based.

Chapter III presents an extensive study of the Matrix-Object Dislocation construction, in which the dislocated element is shown to be in matrix object position, but at the same time does not function as a normal object with respect to certain syntactic operations. This apparently anomalous behavior has its roots in the fact that, though the dislocated element is a constituent-structure object of the matrix verb, it is not, in most cases, a thematic argument of that verb. The dislocated element, bearing the function OBJ to the matrix verb, serves to give prominence to an argument in the complement clause, and therefore also bears the TOPIC function with respect to that clause. Verbs in Moroccan subcategorize for this TOPIC function, as not all verbs that take closed complements allow Matrix-Object Dislocation.

Chapter IV constitutes an investigation of complements to verbs other than the Matrix-Object Dislocation verbs. These complements superficially appear to be open complements, but closer examination reveals that, for the most part, they are functionally closed complements. Only a small class of verbs are found to take open adjectival complements.

Thesis Supervisor: Kenneth Locke Hale

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## Structural Invariance and Symmetry in Syntax

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Submitted on October 5, 1983 to the Department of Linguistics  
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Degree of Doctor of Philosophy

### Abstract

This essay investigates the incidence of the Isomorphy Principle, a principle of thematic invariance across levels of syntactic representations, on the nature of the relations between these levels, within the model of Universal Grammar proposed by the Transformational Generative Theory (the Government and Binding framework). This leads us to undertake a reanalysis of various syntactic dependencies –move Np, move-wh...– and to develop a theory of  $\Phi$ -categories and correlatively a theory of Binding relations.

Move NP is exclusively studied from the point of view of syntactic chains, from which its properties will be shown to be entirely derivative: this result entails primarily that D-structure is not an independent level of representation.

Move-wh and more generally the theory of the set of A'/A relations is investigated. We show that this set is symmetric with respect to the value of any binary classificatory features used. In particular, we conclude that invariance across levels is one such feature so that A'/A relation types partition equally depending on whether they remain invariant across levels or not: we also deduce that clitic constructions do not involve an A'/A relation.

The set of  $\Phi$ -categories is also shown to be closed under symmetry. From this, we conclude that there is no type distinction between expletive PRO and NP-trace, and between pronouns, resumptive pronouns, wh-traces and pro. This last result is the conceptual cornerstone of our treatment of Weak Crossover, Strong Crossover and Parasitic Gap structures. We conclude as well that PRO is a "pure" anaphor and that the theory of its referential properties –Control Theory– partly reduces to Binding Theory, partly to the theory of the range of non-overt operators.

Thesis Supervisor: Noam Chomsky

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## Restructuring and Reanalysis

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Submitted to the Department of Linguistics and Philosophy on  
October 20, 1983 in partial fulfillment of the requirements for the  
Degree of Doctor of Philosophy in Linguistics

### Abstract

This thesis, assuming the existence of restructuring and reanalysis processes in grammar, seeks to provide a precise and minimally simple definition of such processes (Chapter 2), which successfully applies to restructuring and reanalysis phenomena both held to be such independently of this thesis (causative constructions, Chapter 4), and introduced as such in this thesis (middle constructions, Chapter 3).

Chapter 2 comprises the theoretical core of the thesis. Section 2.1 seeks to formalize the intuitive idea that restructuring is defined by the presence of more than one structure for one and the same sentence in one and the same level of grammar. Section 2.2 seeks to formalize the intuitive idea that reanalysis is defined by the merger of the subcategorization properties of an element with the subcategorization properties of another element.

Chapters 3 and 4, on the other hand, comprise the core of the thesis' empirical discussion. Chapter 3, in particular, uses middle constructions, concretely Italian *si* constructions, to illustrate the theory of restructuring arrived at in section 2.1; while Chapter 4 uses causative constructions, concretely in French, to illustrate the theory of reanalysis arrived at in section 2.2.

Various theoretical and empirical issues essentially independent of restructuring and reanalysis are taken up in the course of the thesis as the opportunity presents itself. Perhaps the most sizable example of this is to be found in Chapter 3; where, in taking into consideration Italian *si* for the purposes of restructuring, we independently present what to our knowledge is the first unified theory of its impersonal and reflexive constructions, as well as of its middle ones.

Thesis Supervisor:                   Noam Chomsky

Title:                                    Institute Professor

