

Section 4 Linguistics

Chapter 1 Linguistics

Chapter 1. Linguistics

Academic and Research Staff

Professor Morris Halle, Professor Noam A. Chomsky

1.1 Introduction

The work of the Linguistics group is directed towards a better understanding of the mental capacities of human beings through the study of the nature, acquisition and use of language. Language is a uniquely human faculty: only humans appear to be capable of learning and using a language, and every normal human acquires knowledge of one or more languages.

We are trying to understand how this linguistic knowledge is represented in the speaker's mind. The central issues of linguistics research are:

1. What is the nature of linguistic knowledge? What do speakers of a particular language such as Latvian, Spanish or Walpiri know, and how does knowledge of one language resemble or differ from that of another language?
2. How do speakers acquire this knowledge?
3. How do speakers put this knowledge to use in producing and understanding utterances?
4. What are the physiological mechanisms that provide the material basis for storage, acquisition and utilization of linguistic knowledge?

Our ability to answer these questions differs considerably, and our research reflects these differences. At present, we have progressed further with regard to answering the questions posed by item one and have made less progress with item four. Currently, our research is heavily concentrated on issues concerned with the nature of the knowledge that characterizes fluent speakers of various languages. However, we are making a significant effort to solve the other questions also.

We are studying these topics along a number of parallel lines. Linguists have investigated the principles by which words are concatenated to form meaningful sentences. These principles have been the primary domain of inquiry into the disciplines of syntax and semantics. Phonology studies the sound structure of words while morphology examines the manner in which different languages combine different meaning-bearing units (specifically, stems, prefixes, suffixes and infixes) to form words. The latter topic has attracted increasing interest in recent years and will probably become

more prominent in our research efforts in the future.

1.2 Abstracts of Doctoral Dissertations

The following are abstracts of dissertations submitted in 1991 to the Department of Linguistics and Philosophy in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Linguistics.

1.2.1 Morphology After Syntax: Pronominal Clitics in Romance

M. Eulalia Bonet i Alsina

Abstract

This dissertation is primarily concerned with non-transparent output forms in Romance pronominal clitic combinations. The position is taken that pronominal clitics constitute hierarchical structures of morphological features. Each clitic is a subset of the structure shown below:

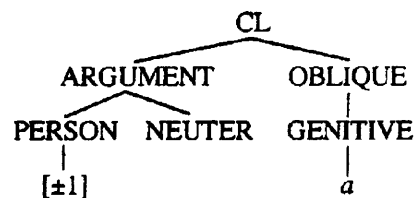


Figure 1.

In addition, clitics might contain an Agreement node, dependent on the most specific node dominated by [ARGUMENT], with the private features [feminine] and [plural].

It is assumed, with Kayne (1975) and later work, that pronominal clitics are generated in argument position at D-structure and are adjoined to an Infl node by S-structure. S-structure contains fully

specified syntactic feature matrices, as argued for in Lumsden (1987). The morphological structures schematized in figure 1 are created in the mapping from S-structure to the Morphology Component (cf. Halle (1989) and related work). Within the Morphology Component, morphological rules might alter in certain contexts the original structure assigned to a specific clitic. In this fashion, most non-transparent forms are derived, predicting that an important subset of the non-transparent output forms will have the same surface form as other clitics of the language instead of becoming an arbitrary phonological sequence.

The surface order of clitics is established in the Morphology Component through mapping to a template. Some other non-transparent forms are obtained at this point, when two clitics (or morphological features) compete for the same slot. Since only one of them can be mapped, the other one simply does not surface.

Phonological information not present in the syntax is introduced within the Morphology Component by spell-out rules, providing the input to PF, which deals only with phonological processes.

The type of account presented in this dissertation voids the need for filters that rule out sequences of phonologically identical sequences, criticized often in the literature.

1.2.2 On the Typology of Wh-Questions

Lisa Lai Shen Cheng

Abstract

This thesis proposed that the typological distinctions among languages with respect to the formation of wh-questions can be attributed to the availability of question particles and the properties of wh-words. It is argued that the availability of question particles correlated with the lack of syntactic wh-movement. A theory of Clausal Typing is proposed to account for this correlation. In particular, languages employ either question particles or syntactic wh-movement to type a clause as a wh-question. It is shown that the Principle of Economy of Derivation predicts that (a) no language has the options of alternating between the two methods of Clausal Typing and thus there are no languages with "optional movement" of wh-words and (b) movement of one wh-word is sufficient to type a clause as a wh-question. Apparent counterexamples to the proposal are discussed. It is argued that in languages with apparent optional fronting of wh-words (e.g., Egyptian Arabic), sen-

tences with a clause-initial wh-word are clefts. In addition, it is shown that in languages which front multiple wh-words in multiple questions, the wh-words are morphologically complex and need to satisfy a licensing requirement independent of Clausal Typing.

The internal structure of wh-words in an in situ language, namely Mandarin Chinese, is also examined. It is shown that wh-words in Mandarin are indefinite NPs, which lack quantificational force, and they are polarity sensitive. In addition, two LF operations are discussed: Quantifier Raising and LF wh-movement. It is shown that the lack of scope ambiguities in Mandarin can be attributed to lexical properties of indefinite NPs. Arguments for and against LF wh-movement as well as the landing site of wh-words at LF are examined. It is shown that evidence against LF wh-movement does not hold, and arguments against adjunction of wh-words to IP and LF will be provided.

1.2.3 Resumptive Chains in Restrictive Relatives, Appositives and Dislocation Structures

Hamida K. Demirdache

Abstract

This thesis proposes that *wh*-operators in (headed) restrictive and non-restrictive relatives are resumptive chains. A resumptive chain can have +*wh*-features or -*wh*-features. If it has -*wh*-features, it can be either a null pronoun or an overt pronoun. It can have either of the two interpretations that pronouns have. Thus, in restrictive relatives, it has a bound variable interpretation. In appositive relatives, it is a referring pronoun (or what Evans (1982) calls an E-type pronoun). This resumptive chain can be created at S-structure or at LF. In particular, it is argued that what has been called (misleadingly) in the literature a "resumptive pronoun" in languages like Hebrew or Irish (i.e., a pronoun that freely alternates with gaps in certain positions) is an instance of in situ relativization: an overt -*wh*-pronoun in situ at S-structure creates an operator-variable chain at LF. It does not have the same range of interpretations as a trace created at S-structure because it is not a variable at S-structure. In contrast, the *wh*-operator in appositive relatives never has a bound variable interpretation. An analysis of appositives is proposed based on Emonds' (1979) *Main Clause Hypothesis*. It is argued that appositive clauses are lifted at LF out of the matrix clause containing their antecedent. The relation between the appositive pronoun and its antecedent is treated on a par with anaphora

across discourse, except in one respect: anaphora is obligatory precisely because of the *wh*-features of the pronoun. Finally, it is argued that, under the above proposal, the (Clitic)Left-Dislocation construction discussed by Cinque (1991) must be a *wh*-movement construction. The clitic-pronoun is a *-wh*-operator in-situ at S-structure, on a par with the pronoun that appears in Hebrew relatives. However, it has the syntactic properties and the interpretation of the *+wh*-operator in appositive relatives.

1.2.4 The Syntax of Argument-Structure-Changing Morphology

Mika C. Hoffman

Abstract

The study of the causative and applicative constructions in Bantu languages gives us an insight into some complex applications of theories of argument structure and Case theory. This thesis develops a theory of lexical complementation which gives a unified account of causative and applicative constructions and double object constructions of all types: all these multiple object constructions are examples of predicate-predicate complementation. Causatives are examples of VP-VP complementation, while applicatives, locative alternation verbs, and dative double object verbs are examples of VP-PP complementation. Complementation involving PP is examined in some detail, as a theory of Preposition Inversion is developed and shown to be responsible for applicative asymmetries. In addition, a theory of licensing involving movement to functional head accounts for a number of object properties in Bantu.

1.2.5 Topics in Conditionals

Sabine Iatridou

Abstract

This thesis is concerned with a number of issues that pertain to the syntax and semantics of conditional constructions.

In chapter 1, there is a treatment of basic syntactic properties that characterize the relationship between the IF-clause and the matrix clause, as well as relationships internal to the IF-clause. Some similarities between if and other elements that introduce clauses are discussed.

In chapter 2, there is a typology of conditional constructions with respect to their meaning and syntactic properties. It is argued that there are three different types of conditionals, if the semantic and syntactic relationship between the IF-clause and the matrix clause is taken into account. The contrasts between two conditional types is assimilated to the contrasts between appositive and restrictive relative clauses, and between BECAUSE- AND SINCE-clauses.

In chapter 3, it is argued that conditional then has a meaning, and a specific proposal is advanced to account for its distribution on semantic grounds.

In chapter 4, there is a discussion of the syntactic properties of conditional then, and a general proposal is put forth for the syntactic environments in which its presence is restricted.

1.2.6 The Semantics of the English Progressive

Katherine Susan Kearns

Abstract

This thesis proposes that the English progressive semantically modifies the relation between events and times, and that this semantics uniformly underlies a variety of apparently disparate readings of the progressive. Chapter 2 begins with Jespersen's observation that the progressive presents an event as a temporal frame around a given time. This intuition may be expressed as follows: where *t* is a given time, and *t'* is the time of an event *e*, a progressive sentence reporting *e* asserts that *t'*, the event time, properly contains the framed time *t*. In this view, a progressive sentence entails the existence of an event of greater duration than the framed time *t*. The author demonstrates that the temporal frame reading is not an entailment of the progressive but arises by implicature; the existence of an event of greater duration than the framed time *t* is implicated but not entailed. The author also shows that restrictions on the framed time *t* proposed elsewhere, claiming that *t* must be an instant, or that *t* must be non-initial and non-final in *t'*, are incorrect.

Drawing on the contrasting readings of present progressive sentences and simple present tense sentences with event predicates, it has also been claimed that the progressive has a metaphysical character, reporting actual phenomena, while the simple present tense, interpreted as a habitual predication, reports characteristics of the "structure of the world." The author argues that the progressive/non-progressive contrast in the

present tense is basically temporal: the progressive, unlike the (habitual) simple present tense, explicitly dates or temporally locates reported events. The different readings at issue follow by implicature arising from this contrast.

In chapter 3, the author addresses certain problems with the progressive of state predicated, including habituais. Having argued that the progressive is not ill-formed or false with state predicates per se, the author offers an account of the temporary or limited duration reading of progressive state predicates in terms of the implicature outlined in chapter 2 for the progressive/non-progressive contrast in the present tense. Drawing also on a modified version of Carlson's (1977) distinction between individual-level and stage-level predications, the author argues that where a simple tense state predicate has the individual level reading, the progressive form implicates temporariness because it explicitly dates or temporally locates the state described. The author also reviews a class of psychological state predicates and argues that certain of these resist the progressive because the explicit dating of a state or event expressed by the progressive is anomalous.

A very old traditional observation, holding that the progressive is a "definite tense," contrasting with the "indefinite" perfect, is addressed in chapter 4; definite tense forms make reference to specific times and indefinite forms to non-specific times. This classification is seen as resting on the pre-Russellian view of the articles *a* and *the*, developed more recently as the Familiarity Theory of Definiteness. The author argues for a quantificational analysis of the novelty and familiarity effects and claims that the original definite/indefinite classification of verb forms should be captured by differences in the quantification over times. In present perfect sentences event times are existentially quantified, and in progressive sentences, the framed time is bound by quantificational *the*.

Finally, in chapter 5 the author discusses the Imperfective Paradox and the two main types of response to it. Dowty (1979) is the chief example of the first approach, which is to analyze the progressive as a kind of counterfactual. The author explores the essential components of this view and argues that certain inadequacies indicated the correctness of the second view. The second view holds that the paradox is only apparent, because the predicate found in a progressive sentence is not the same as the predicate in the corresponding non-progressive sentence; the troublesome entailments are not valid on this view. The author presents additional evidence for the second view and also argues that the two distinct readings are

found in the uninflected predicate, which is ambiguous.

1.2.7 The Aspectual Nature of the Thematic Relations: Locative and Temporal Phases in English and Chinese

Elizabeth Mary Klipple

Abstract

This thesis investigates the properties of elements on the "border" of thematic structure. It deals primarily with various sorts of locative and temporal phrases, with the aim of elucidating which of these phrases should be considered to be thematically related to the verb, and what the factors are which determines this division. It is proposed that the Internal/External distinction is the major dividing line between thematic and non-thematic elements; an element is "internal" if it adds to the information about the internal aspectual structure of the event denoted in a sentence; it is external if it does not contribute information about this structure. Thus, thematic structure is closely tied to aspect and event structure.

This approach predicts that certain elements which are normally not considered to be relevant to thematic relations should be included as part of thematic structure. These elements are locative phrases indicating goal, direction, path, source, and posture, and temporal phrases indicating iteration and duration, measure phrases, and resultatives.

It is further maintained that there is a tight syntax/semantics correlation and that the semantic property of contributing to the internal aspectual structure of an event corresponds to the syntactic property of being within the lowest projection of the VP.

Chapter 2 provides syntactic evidence in English for the internal/external distinction, and shows that for the most part the types of phrases predicted to be event-internal are also VP-internal. Chapter 3 presents evidence from Mandarin Chinese; in this language, the surface order of the various types of locatives and temporals provides a strong argument for the distinction as drawn by the author.

In chapter 4, the author looks at binding relations between various types of VP-internal and VP-external phrases, in order to probe the structure of the VP. The author considers the proposal of Larson (1988) that all post-verbal PPs are within

the VP, but shows that in fact it is better to treat these elements as VP or IP adjuncts, as is traditionally done.

In chapter 5, the author explores in more detail the semantic properties of internal locatives and temporals. Goal and Posture phrases are argued to be secondary predicates which combine with the main verb, on a par with the resultative complements. Direction, path, and durative phrases are modifiers of a parameter associated in the lexicon with the main predicate. Iterative phrases are taken to be something like numerals which quantify subparts of the event. Finally, the author compares her approach with the theories of Gruber and Jackendoff and that of Davidson (1967) as modified by Parson (1990).

1.2.8 On Embedded Interrogatives and Predicates That Embed Them

Utpal Lahiri

Abstract

This thesis deals with certain issues in the interpretation of embedded interrogatives, in particular, the role of the notion *answer* to a question in the interpretation of embedded interrogatives. Chapter 1 discusses a certain view about the interpretation of embedded interrogatives derived from Hintikka (1976) and Berman (1991) and raises problems for the view that embedded interrogative complements of predicates like *know* are open sentences. The author discusses the phenomenon of Quantificational Variability, viz., the fact that certain adverbs of quantification restrict the interpretation of structures containing interrogatives embedded under predicates like *know* in a way they do not for predicates like *knows*. The author argues that the distinction between two classes of predicates is not between factive and non-factives, but between those predicates that are true of questions and an agent only if their proposition-taking counterpart is true of the agent and some answer to the question. The author also argues that certain predicates require their embedded interrogatives to be interpreted as whole answers rather than the way expected of the open sentence view.

In chapter 2, the author examines possible syntactic evidence for the claim that the interrogative complements of predicates like *know* and predicates like *wonder* are syntactically distinct and shows that no such evidence is available in English. The author examines the case of Spanish which has been proposed to maintain such a distinction, and again show that the relevant distinction is between speech-act and

non-speech-act verbs, and so is not directly relevant to the issue of which predicates allow Quantificational Variability.

In chapter 3, the author develops an account of Quantificational Variability that highlights the ways in which answers to questions are relevant in interpreting embedded interrogatives. In order to do this, the author first distinguishes between two classes of adverbials of quantification, viz., adverbials of frequency and adverbials of quantity and precision and shows that only the latter are relevant to Quantificational Variability. The author argues that *natural* answers to questions can be viewed as things with a Boolean part-structure and develops a theory of quantification for atomic Boolean algebras modeled on Higginbotham's treatment of mass-quantification. Since *natural* answers have an atomic Boolean part-structure, this analysis, which is needed independently, can be extended to interrogatives.

1.2.9 Effects of Head-Movement on Subjacency and Proper Government

Paul S. Law

Abstract

This dissertation offers a perspective from which to view the relationship between extraction and head-movement. In particular, it claims that bounding theory must take syntactic head-movement into account in defining bounding domains. The possibility of subject extraction is related to abstract verb movement to C, which is argued to be a consequence of the interaction between the Principle of Full Interpretation and various principles in the grammar is also claimed.

It is suggested that bounding domains be defined with respect to head-movement. Specifically, a potentially bounding category can be subsumed under another if their heads are morphologically merged. As a result, the dominating maximal projection comes to delimit the bounding domain. Evidence is presented to show that VP can be bounding in general and that cases where the bounding effect is seemingly absent are due to head-movement. It is also shown how this conception of bounding domains fits into a theory of bounding with two parameters which can annul bounding effects of maximal projections by complementation. A principled explanation obtains for why certain combinations of categories as bounding domains are possible, and why some others are not. The predicted four types of languages with respect to bounding variations are all attested. It is argued that in order to account for

the extraction asymmetry between adverbials and others, successive-cyclic movement should be strictly constrained by structure-preservation.

The apparent lack of the *that*-trace effect in some instances is suggested to have a principled explanation in terms of abstract verb movement to C, which is either a result of the Principle of Full Interpretation interacting with a theory of expletive replacement, or is due to some language-particular property like the verb-second constraint in most Germanic languages requiring movement of the finite verb to the empty C position at LF, if it is not already there at S-structure. One desirable consequence that immediately follows is that the class of proper head-governors can now be restricted to all and only lexical categories. It is suggested that abstract verb movement to C in relative clauses is independently justified by theory of predication, which requires a lexical category to fill the head of a constituent which is semantically a predicate. Consequently, the subject trace is properly head-governed by the verb in C. The possibility of abstract verb movement to C thus explains in a uniform way the anti-*that*-trace effect in relative clauses and the *that*-trace effect in complement clauses, without the assumption that the complementizers in these two types of constructions are different entities.

1.2.10 Tense and Temporal Order

Harry Leder

Abstract

This thesis investigates the nature of temporal reference in natural language. Reference to time enters into linguistic structures in two distinct ways, namely *tense* and *temporal modification* by adverbials.

The author starts by considering temporal modification, since it is noncontroversial here that an analysis in terms of predicates of events can be implemented straightforwardly. Events, then, are conceived along the lines of Davidson (1967a) and are assumed to be encoded in linguistic representations as proposed by Higginbotham (1985), etc. Being predicated of properties, viz. which are temporal duration and temporal location; the first of these answers to the question *How long?* the

latter, to the question *when?* Both can be specified by means of temporal adverbials.

Taking the analysis of temporal adverbs as a guide, the author analyzes tenses as predicates of events as well, thereby placing in the context of the Davidsonian theory of adverbial modification the idea due to Kiparsky (1968), that tense is adverbial in nature. It is immediately obvious that tense is concerned only with temporal location, not with duration.

The author proposes to analyze the tenses as functional instances of the abstract ordering relation of events found at work in adverbial modification, and specifically in the temporal connectives or conjunctions. In the case of simple matrix clauses, tense establishes an ordering relation between the event purportedly described in the sentence and an utterance-event.

Analyzing the tenses as ordering relations predicts two possibilities for construing embedded tenses. One option, called Serial embedded tense, is for an embedded event to be placed in an ordering relation with the event of the next-higher clause. Alternatively, with what we call Parallel embedded tense, the embedded event is ordered relative to the utterance-event by its tense, independently of, and parallel to, the ordering of the matrix event vis-à-vis the same utterance event.

Both patterns are found to exist side by side in Latin, where Parallel and Serial tense are expressed by indicative and subjunctive tense-marking, respectively. But as we see in the latter part of this thesis, the author also finds evidence that both patterns are available in English. Parallel tense, subject to certain restrictions to be made precise, give rise to the "double access" reading discussed by Enç (1987), Ogihara (1989), and others, while Serial tense is responsible for the so-called "sequence of tense phenomena." Both of these are discussed in several frameworks; they provide crucial cases which permit sorting the different predictions made by competing analyses.

The view proposed here, which treats the tenses as two-place predicates of events is found to be superior to alternatives, both in its coverage of tense-phenomena and in its simplicity. The semantics of tense can be assimilated to known schemes for interpreting context-dependent expressions.

1.2.11 Investigations Into Grammatical Knowledge

James Douglas Saddy

Abstract

This work presents a case study into the nature of one brain-damaged individual's ability to comprehend sentences. The focus of the research is on the ability to construe quantificational scope ambiguities. Two broad results will emerge. First, the author demonstrates that the notion of comprehension as it is currently used in aphasic research is too narrow. In addition, the author argues against the position that linguistic impairments are the result of damage to an individual's grammatical knowledge. Secondly, the author demonstrates that evidence from aphasia can bear on a formal linguistic issue in an interesting way.

The aphasiological investigation (1) demonstrates that grammatical knowledge (competence) may be retained in a grammatism and (2) presents evidence of a hitherto unknown comprehension impairment that is tied to the event structure of a sentence.

The linguistic analysis of the aphasiological data argues for the existence of a syntactically active abstract argument position associated with predicates, thus providing support for an extended Davidsonian view of argument structure. This approach also provides for an alternative account of the general nature of agrammatic receptive deficits in terms of an impaired ability to distinguish

the properties of such arguments and links the pattern of deficit comprehension observed to the normal range of scopal interpretations attested in languages that do not distinguish nouns and verbs at the lexical level.

The particular pattern of the comprehension deficit exposed by the research leads one to conclude that universally quantified terms are understood as binding the event position in the syntactic representations generated. Definite and indefinite phrases, however, do not. The aphasic evidence suggests that indefinites are not quantificational. Nevertheless, both wide and narrow scope readings are attested. This leads us to question whether this pattern is due to the special nature of the deficit or whether it reflects a true distinction between the quantificational properties of indefinite existential and universal expressions in natural language.

Arguments from Heim and Berman are presented that support the notion that indefinites and WH expressions have no inherent quantificational force. The special syntactic and interpretational properties of WH expressions in Bahasa Indonesia are then presented as demonstration that scoped interpretation of indefinites may be available without movement.

This result allows the author to claim that in the agrammatic case, the normal application of core properties of grammar to a well formed syntactic representation obtain. The pattern of comprehension in the agrammatic case follows from a merging of the distinguishing characteristics of predicate types.

