

## **Section 4    Linguistics**

### Chapter 1   Linguistics



# Chapter 1. Linguistics

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### 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 1992 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 Subjects and Complementizers

Philip Branigan

##### **Abstract**

This thesis is concerned with the position that subject and objects occupy at LF. It is demonstrated that objects must occupy a Case position outside of VP at LF in order to account for the effects of objects in participle agreement configurations and in configurations in which they interact with 'dependent' elements in VP adjuncts. It is shown that subjects occupy a non-Case position located between CP and IP, a position which can also be occupied by inverted locative phrases in English. The A-bar status of this position leads to 'that-trace' effects and a greater sensitivity to A-bar extraction of the subject from inside an island.

#### 1.2.2 Adjunct Extraction and Chain Configurations

Michael V. Hegarty

### **Abstract**

This study is concerned with the semantic content of complementizers, and with the modes of interpretation of adverbial *wh* elements and with their possibilities for *wh* movement. It examines the event structure of complement clauses, revealing a difference of semantic function between the complementizers in tensed factive complement clauses and propositional complement clauses. This yields a difference in their effects on adverbial *wh* extraction. The effect of complementizers on *wh* extraction points to the Minimality Condition, taking effect for nongoverning heads such as complementizers. An attempt is made to define antecedent government in such a way as to capture the Minimality effects of complementizers.

Chapter 1 reviews some pertinent aspects of the underlying syntactic and semantic frameworks, and contains a brief outline of the thesis.

Chapter 2 examines the event structure of complement clauses. It argues that the event position of factive complements is discharged by the factive complementizer, yielding an interpretation of factive complements as involving discourse binding of the event position of the complement clause. It then examines the event position of various infinitival complement clauses and of gerunds, as well as some other contexts which involve discourse binding of an event variable, and which exhibit the resulting presupposition that the event occurred. In all cases, event positions which are not bound are found to exhibit the possibility of unselective binding by an adverb of quantification.

Chapter 3 examines the pattern of adverbial *wh* extraction from factive and propositional complement clauses and shows that this pattern depends on the event structures of the complement clauses detailed in Chapter 2. Adverbial *wh* extraction out of infinitivals and gerunds is then examined, along with extraction from some other contexts which involve discourse binding of the event variable.

Chapter 4 examines some simplifications in extraction theory that follow from a typology of chains at LF proposed by Chomsky. On the basis of these simplifications, a radically reduced system of  $\gamma$ -marking is proposed for extraction theory. A definition of antecedent government is then formulated so as to capture the Minimality effects on antecedent government of intervening complementizers.

Chapter 5 summarizes the results of the thesis and discusses them in the light of some recent literature.

### **1.2.3 The Computation of Prosody**

William J. Idsardi

#### **Abstract**

This thesis presents a new theory of metrical representations and computations. This theory emphasizes that the metrical grid is a separate module for the phonology, devoted to the calculation of partitioning of phonological elements. The metrical grid consists of parallel tiers composed of three kinds of elements: grid marks and left and right boundaries. A single boundary serves to define a metrical constituent: a left boundary creates a grouping of the elements to its right, a right boundary creates a grouping of the elements to its left.

The calculation of the metrical grid is accomplished through the use of both rules and constraints. This division of labor accounts for observed properties of stress systems in a succinct manner. Metrical rules apply successively in a derivation, thus modelling the functional character of metrical structure assignment. The constraints prevent the application of metrical rules that would generate universal or language-particular disfavored configurations.

The interface to the metrical grid module is controlled by two parameters of projection, which provide the initial grid marks and boundaries. Further parameterized rules of Edge marking, Iterative constituent construction and Headedness complete the construction of the grid.

This theory allows the derivation of Extrametrical effects through the interaction between Edge marking and Iterative constituent construction. Constraints against particular configurations yield both clash effects and a ternary parsing ability.

Further, the Edge marking parameter provides the requisite formal power to deal with stress introduced by specific morphemes in such languages as Turkish, Macedonian, Polish, Russian, Cayuvava, Shuswap (Salish) and Moses-Columbian (Salish).

### **1.2.4 Japanese Syntactic Structures and Their Constructional Meanings**

Miori Kubo

## Abstract

This dissertation explores the sentential structures of Japanese, of both matrix and embedded clauses, with special attention given to the configurational relation between a predicate head  $X^0$  and its arguments. It is argued that two quite distinct sentential forms, IP and CP, are possible in Japanese. A leading idea pursued here is that crucial factors determining the configurational relations are (i) whether a head goes through syntactic head movement (Travis 1984, Baker 1988) and (ii) whether a head is syntactically filled or empty (Emonds 1985). Among the sentence types researched are included not only sentences with single verbs, but also predicate attribute sentences, complex verb sentences containing causative, desiderative and potential suffixes, and a representative range of embedded sentences.

In relation to head movement, I argue for a strict structural case marking analysis in the spirit of Takezawa (1987) and Morikawa (1989) and show that the configurational relations between case-assigning heads and NPs are directly mirrored by morphological case. Both SPEC-HEAD agreement and government are motivated as case assigning mechanisms, the former being reserved, however, for only subject-predicate relations. A central discovery here is that the functional categories in Japanese, C, I, and D, each uniformly assign one and only one so-called nominative case *ga*; this in turn supports the existence of functional categories as a class.

Another effect of head movement, via case marking, related to possible positions for subjects and their associated configurational meanings. That is, the two well-known interpretations of NP-*ga*, neutral and exhaustive, are argued to result from them occupying different positions in SPEC(I) and SPEC(C). The distributional distinctions between SPEC(C) and SPEC(I) are in turn determined by positions of the corresponding heads, which are governed by various syntactic constraints. In the course of investigation, quite interesting parallels, until now obscured, are brought out between noun phrases and sentences.

This research can be taken as a concrete effort to investigate various structural configurations and their configurational meanings, on the basis of the idea that meaning is in essential parts simply form. Among the contrasts investigated are activity versus stative verbs, exhaustive versus neutral interpretations of NP-*ga*, and the differing syntactic and interpretive behaviors of the two clausal types CP and IP. In a final chapter, I motivate a correlation

between these two clausal structures and Kant's two types of judgements, analytic and synthetic.

## 1.2.5 Coordination and Comparatives

Friederike Moltmann

### Abstract

This thesis deals with three topics, coordination (chapter 1-3), comparatives (chapter 4) and exception phrases (chapter 5).

In the first three chapters, I will present a new three-dimensional theory of coordination and a particular way of compositionally interpreting three-dimensional syntactic structures. The theory is applied to ATB constructions in chapter 1 and to constructions with split antecedents in different conjuncts of coordinate in chapter 2. I propose that both ATB extraction and the constructions with split antecedents involve a new construction type of implicit coordination. In chapter 3, I will discuss the possibility of implicit coordination in constructions other than 'and'-coordination and ATB extraction.

Chapter 4 presents a general syntactic and semantic analysis of comparative constructions. In particular, it presents answers to the following three questions. First, how do quantifier scope interactions come about in comparative clauses and other *wh* constructions. Second, how is the empty element in comparative deletion contexts identified. Third, what is the syntactic basis for evaluating comparative clauses the way they are most plausibly evaluated, namely as universal quantifiers over degree. In the fourth chapter, I will also address the issue of whether comparatives involve coordination. I will argue that comparative sentences may have two syntactic structures simultaneously, a coordinate structure and a subordinate structure. This also holds for phrasal comparatives.

Chapter 5 deals with various kinds of exception phrases and a number of other constructions which are either semantically or syntactically related to exception constructions, namely 'extent clauses', 'almost'-phrases and amount relatives. I propose a general semantic condition to account for the quantifier constraint imposed by exception phrases and semantically related constructions. Furthermore, I will argue that exception constructions may involve polyadic quantification. Regarding the syntax of exception phrases, I will discuss the issue of whether exception constructions syntactically involve coordination, but argue against this possibility.

## 1.2.6 Crossing and Nested Paths: NP Movement in Accusative and Ergative Languages

Kumiko Murasugi

### **Abstract**

This thesis develops a theory of syntactic ergativity based on the Case feature requirements which motivate NP movement. In Chapter 1, I present an Ergative Parameter derived from the Case features of twofunctional heads, T(ense) and Tr(ansitivity). In an ergative language, the Case features of the higher T(ense) are strong, requiring movement to its SPEC at s-structure. In an accusative language, the Case features of the lower Tr(ansitivity) are strong, forcing s-structure movement to its SPEC. Economy Principles determine that it is always the subject, generated in SPEC VP, which raises to the SPEC of T or Tr (depending on the language) at s-structure. At LF, the object raises to the remaining SPEC position. This results in two types of movement: "Crossing Paths" in accusative languages, and "Nested Paths" in ergative languages. The two paths reflect the different Case and agreement patterns found in the two language types, as each functional head is associated with a particular Case: nominative/absolute with T, and accusative/ergative with Tr. In an intransitive clause, the subject raises to SPEC TP in both types of languages.

Chapter 2 investigates consequences of the proposed theory for NP movement and verb raising in accusative languages. The topics relating to NP movement include expletives in SPEC TP, the EPP in infinitival clauses, and raising constructions in English. I also discuss verb fronting in V2 and VSO languages, proposing that this movement is required by a [finite] feature in C.

In chapter 3, I provide evidence for my claim that ergativity involves the raising of the object (O) and intransitive subject (S) to SPEC TP, the position of transitive (A) and intransitive (S) subjects in accusative languages. I discuss properties shared by O/S in an ergative language, and A/S in an accusative language, such as the availability for relativization.

In Chapter 4, I investigate syntactic and semantic properties which group together S and A in both language types, claiming that they involve the notion of highest s-structure argument, and thematic roles. Chapter 5 discusses various issues pertaining to ergativity.

## 1.2.7 Features, Positions and Affixes in Autonomous Morphological Structure

Robert R. Noyer

### **Abstract**

This thesis develops a theory of the mapping from the output of syntactic rules to the input to phonology within a component of Morphology. Three types of information are shown to be independently manipulable in the algorithm deriving fully inflected words: morphosyntactic features, phonological material (affixes), and positions-of-exponence.

To capture categorial neutralizations at the morphological level, a filter-based approach to the Impoverishment of morphosyntactic representations is proposed. Filters are argued to be automatically assumed unless positive evidence suppresses them in the learner. Neutralizations are also shown to occur at three other levels: (1) underspecification of realization rules/affixes, (2) disjunction of affixes competing for a position-of-exponence, and (3) transparency of redundant morphosyntactic values. A hierarchy of features is proposed, which, in the unmarked instance, governs the direction of categorial neutralization and the ordering of affixes and morphological rules, where not determined by syntax or by the principle of descending complexity due to Panini.

The mapping to phonological form is proposed to take place in two phases. In the first phase, morphosyntactic well-formedness is established through the Impoverishment of morphosyntactic features and the Linearization, Rebracketing, Merger (Marantz 1988) and Fusion of syntactic heads, giving a level of constituents termed  $M^s$ . In the second phase, the string  $M^0$  is mapped to the well-formed morphological word through rules and affixes. Morphological words are shown to display idiosyncratic non-phonological conditions of well-formedness (obligatory or limited positions-of-exponence) which comprise *autonomous morphological structure*. Particular attention is paid to cases of  $M^0$  splitting, where features from a single morphosyntactic source are realized at multiple positions.

Features in input morphosyntactic representations are argued to be *discharged* through the instantiation of affixes, sometimes at obligatory positions-of-exponence, which are also then discharged. This discharge constitutes spell-out or realization of phonological material. Because both features and positions may be discharged independently, it becomes possible to express disjunction

across position classes, termed here *discontinuous bleeding*. Further, the Rule-Affix Hypothesis states that rules change phonological material and do not discharge morphosyntactic features; affixes add phonological material and do discharge such features.

The Introduction situates the current proposal within prevailing theories of inflection, Lieber (1980, 1992), Anderson (1981, 1992), and Halle (1989a, 1992). Chapter 1 exemplifies the theory through a detailed analysis of the Afroasiatic prefix-conjugation. Chapter 2 gives an explicit theory of person-number features and their interpretation, in particular the inherent number system of Kiowa-Tanoan. Chapter 3 treats complex multiple argument agreement systems with particular attention to the transitive clitic sequences of Nunggubuyu and Ket.

### 1.2.8 Syllables and Templates: Evidence from Southern Sierra Miwok

Kelly D. Sloan

#### **Abstract**

This thesis examines aspects of the syllable structure and templatic phonology of Southern Sierra Miwok (henceforth SSM). SSM provides strong evidence for a model of phonological organization incorporating an x-slot tier (a 'segmental model'). I advance three arguments in favor of a segmental model. First, I argue that SSM exhibits floating x-slots and floating phonemes. SSM has a complex array of length and alternation phenomena. I demonstrate that by utilizing singly-linked phonemes, doubly-linked phonemes, floating x-slots, floating phonemes and combinations of these, all of the surface forms can be derived by syllabification without recourse to any special lengthening, shortening or deletion rules. I propose a hierarchy of elements in which x-slots with phonemic content have precedence over floating x-slots which in turn have precedence over floating phonemes.

Second, I show that the behavior of morpheme-final geminates in SSM is inconsistent with the moraic analysis of gemination proposed in Hayes (1989). Only a model which represents geminates as holding two positions or 'slots' will properly account for the gemination facts. The third type of evidence comes from the templatic system of SSM. I demonstrate that SSM exhibits the three distinct templates CVCVC, CVCVX and CVCVV. I propose that these can be represented by taking advantage of the distinctions between branching and non-branching Nucleus and between floating and non-

floating x-slots. These distinctions readily follow from the x-slot model I advance herein but are unavailable in a moraic model of phonological organization.

The properties of syllabification in SSM appear paradoxical. On the one hand, it can be demonstrated that syllabification must apply at the word-level in order to account for the surface variation in vowel length. On the other hand, in order to explain the distribution of epenthesis, syllabification must arguably take place prior to the word-level. I propose a solution to this dilemma by arguing that syllabification in SSM takes place at two discrete stages. CV(X) syllables are constructed at the lexical level. Subsequent word-level syllabification builds syllables from right-to-left, respecting previously built structure and Maximality. I demonstrate that Prosodic Syllabification, as proposed in Ito (1986, 1989) cannot correctly derive the SSM facts. This results from two (potentially) problematic aspects of SSM syllabification: (i) although syllabification must not apply cyclically, there are certain cyclic effects observed and (ii) epenthesis can only occur at morpheme boundaries even though these boundaries are not visible at the point in the phonology where syllabification must occur. These effects fall out of the analysis that I propose herein.

### 1.2.9 Deletion, Deaccenting, and Presupposition

Christopher D. Tancredi

#### **Abstract**

In this dissertation, I examine the effects of deaccenting—the removal of phonological accent from a constituent—on interpretation. In general, deaccenting of an element is possible only if that element is salient in the discourse context. Saliency alone, however, is not a sufficient condition for deaccenting. The discourse context in (1) makes salient both the verb *hit* and the NP *John*, and it is consequently possible for these elements to be deaccented in (1a,b). However, in (1c), it is not possible to deaccent both of these elements simultaneously. (Focus is indicated by CAPITALIZATION, deaccenting by *small italics*.)

- (1) Mary hit John. Then,  
 a. BILL *hit* SUE.  
 b. BILL KICKED *Mary*.  
 c. #BILL *hit Mary*.

Deaccenting of both the verb *hit* and its direct object *Mary* in (1c) requires that the discourse



context make salient a hitting of Mary, but this condition is not met in (1).

To account for the facts illustrated above, I propose that deaccenting plays a role in identifying the focus-related topic of a sentence, where it is a necessary condition for a sentence to be felicitous in a given context that the focus-related topic of that sentence be instantiated in the context. The focus-related topic of a sentence is generated (roughly) by replacing all focused constituents by variables and combining the resulting structure so as to end up with the smallest structure within which all properties of the remaining lexical elements are satisfied. The resulting structure will be instantiated in a context if there is another element in the context with which it is non-distinct, where variables count as non-distinct from other elements of the same semantic type. By this process, the sentences in (1) will have the focus-related topics in (2).

- (2) a.  $x$  hit  $y$   
 b. Mary  
 c.  $x$  hit Mary

The representations in (2a,b) are instantiated in the context consisting of the sentence *Mary hit John* in (1) above, and hence (1a,b) are felicitous. (2c), however, is not instantiated in this context, and hence is infelicitous.

The analysis sketched above provides an explanation for the felicity or infelicity of a sentence in a larger context based upon the focus structure of the sentence and the composition of the context. While the analysis is of some interest by itself, even more important is the use to which the analysis can be put in accounting for certain phenomena typically associated with VP deletion. Since Sag (1976) and Williams (1977), it has standardly been assumed that restrictions on pronominal interpretations in VP deletion contexts are to be explained in terms of the mechanism that assigns an interpretation to an empty VP. However, we find that identical restrictions appear in contexts in which a VP has been deaccented but not deleted. Thus, parallel to the sentence in (3a) which has only a strict and a sloppy reading available for the (deleted) pronoun, we find an identical restriction for the deaccented pronoun in (3b).

- (3) a. John<sub>i</sub> said he<sub>i</sub> is a genius because Bill did.  
 b. John<sub>i</sub> said he<sub>i</sub> is a genius because Bill *said he's intelligent*.

No analysis of VP deletion in the current literature is capable of accounting for this parallelism. If we assume that a phonologically deleted VP is represented in the LF representation of a sentence as a deaccented VP, however, it becomes possible to account for this parallelism in a principled fashion by assimilating the deletion cases to the deaccenting ones.