Section 4   Linguistics

Chapter 1   Linguistics

Chapter 1. Linguistics

Academic and Research Staff

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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 ressemble 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 to the Department of Linguistics and Philosophy in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Linguistics.
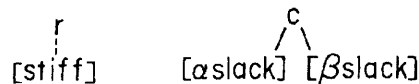
1.2.1 On the Nature of Tone

Zhiming Bao

Abstract

This thesis addresses two issues: the feature geometry of tone and the formal relation of tone with respect to other aspects of phonological representation.
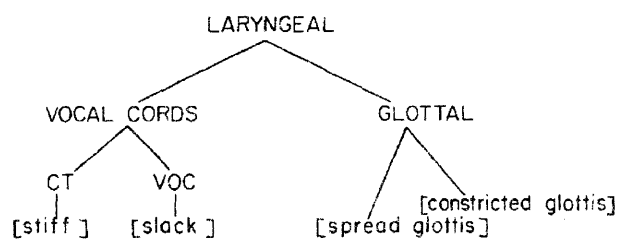
The tonal geometry I propose can be stated simply: tone (t) consists of register (r) and contour (c):

$$
\begin{array}{c}
\text{t} \\
/ \ \backslash \\
\text{r} \quad \text{c}
\end{array}
$$

r is specified by the laryngeal feature [stiff], and c by the laryngeal feature [slack]. In addition, c is allowed to branch. The structures of r and c are below.

$$
\begin{array}{cc}
\text{r} & \text{c} \\
| & / \backslash \\
[\text{stiff}] & [\alpha\text{slack}] \ [\beta\text{slack}]
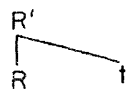\end{array}
$$

Since tone is phonetically executed by the VC node, it is claimed that the geometry of tone is a substructure of the geometry of laryngeal features. The geometry of laryngeal features is shown below (CT=cricothyriod; VOC=vocalis):

LARYNGEAL

```
              LARYNGEAL
              /        \
     VOCAL CORDS        GLOTTAL
       /    \            /     \
      CT    VOC         /    [constricted glottis]
      |      |    [spread glottis]
   [stiff] [slack]
```

It is speculated that register is executed by the articulator CT; and contour by the articulator VOC over time.

I argue against a tone plane. The mapping of tones to tone bearing units (TBU) is an adjunction process: tone is adjoined to the tone bearing unit. Given that the rime is the TBU, tone mapping creates the structure below:

```
R'
|‾‾‾‾‾‾‾‾‾‾\
|          \
R           t
```

Thus, tones form a tier on the syllable plane, rather than an independent plane. This accounts for structure-dependency of tone stability.

After tone sandhi rules have been applied, t is linked to the laryngeal node of the head of TBU through the process of segmentalization. This allows tone to be phonetically realized on vowels or other segments which may be the head of tone bearing units.
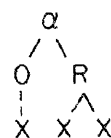
1.2.2 A Formal Study of Syllable, Tone, Stress and Domain in Chinese Languages
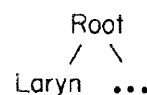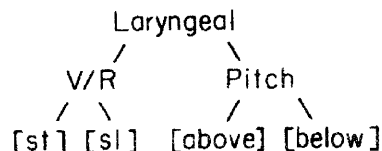
San Duanmu

Abstract

This thesis makes a close examination of syllable, tone and stress in Chinese languages to find out general properties that are shared by all natural languages. It offers the following related claims:

1. All Chinese syllables have the following uniform underlying structure:
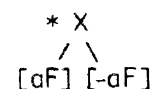
```
    α
   / \
  O   R
  |   ᴧ
  X  X X
```

2. The general tonal model is as follows:

```
        Laryngeal
        /      \
      V/R       Pitch
      / \       /    \
    [st] [sl] [above] [below]
```

```
        Root
        /  \
     Laryn ...
```

where the tonal structure is part of the feature geometry under a Root node. The V/R node represents both consonant voicing and tonal register. The Pitch node is specified for tone-bearing segments only.

3. The tone bearing unit is the moraic segment, or equivalently, the segment in the rime, whether it is a vowel or any consonant. A geminate has two Roots and may serve as two tone bearing units.

4. Contour segments do not exist. Their absence is attributed to a universal principle called the No Contour Principle (NCP), which is given as follows:

```
    * X
   / \
 [αF] [-αF]
```

5. The tonal domain is the stress domain. Most syntax-phonology mismatches are due to lack of stress in some constituents.

1.2.3 Slavic Aspect and Its Implications

Peter Francis Kipka

Abstract

The goal of this thesis is to explore a new theory of verbal aspect. The theory is motivated primarily by a consideration of morphological and syntactico-semantic data from Slavic, but as a module of Universal Grammar it can be shown to be of much more general applicability. Thus Slavic aspect is contrasted with what can be found in a variety of other languages. The proposed system of representation is derivational in character: Final aspectual structures are built up by a small number of operations from lexical representations. The theory posits only two aspectual primitives (the point and the box, yielding perfectivity and imperfectivity in Slavic in a direct fashion).

Chapter 1 begins with an overview of much of the relevant data from the Slavic language Polish. Morphological and syntactico-semantic reflexes of aspect are identified and correlated. This leads directly to a formulation of the theory. The workings of the latter are demonstrated with respect to Polish verbs of motion. Its applicability to other languages (including English) is also discussed; some of the key factors contributing to language differences are the different means of lexical underspecification of aspectual structures.

Chapter 2 examines further data from Slavic. It is shown how double-aspect phenomena, inherent perfectivity, and habituals can be construed as providing support for a theory of the type envisaged here. The proposed theory (its primitives, operations, and conditions) is summarized in this chapter.

Chapter 3 is an exploration of the connection between aspect and prepositional notions. Core prepositions (or their equivalents) are taken to be interaction-denoting categories, a view that is contrasted with locationist hypotheses. Some aspectual consequences of this view are developed.

Finally, Chapter 4 continues the study of extra-Slavic and prima facie extra-aspectual implications of the theory here proposed. The dative alternation in English is examined, as are the English locative alternation, Georgian medial verbs, and restrictions on English 're-' prefixation. Light is shed on these phenomena, which at the same time provide empirical support for such theoretical devices as aspectual zerohood, box-layering, and lexical underspecification.

1.2.4 Conditions on X^0-Movement

Yafei Li

Abstract

X^0-movement is subject not only to the Empty Category Principle (ECP), as is widely accepted by now, but also to such principles as Binding Condition C (BCC) and the Subjacency Condition (SC). This multiprinciple constraining on X^0-movement further supports the similarity between it and XP-movement, which is also constrained by all these principles of the Universal Grammar. Empirically, it enables us not only to explain certain data not explained in a theory based solely on the ECP, but also to provide a unified analysis to such diverse phenomena as verb-incorporation (VI), clitic-climbing (CC), and predicate-clefing (PC).

Theoretical background is laid out in Chapter 1, in which the notion of variables is modified to cover X^0-traces resulting from moving a lexical head to a functional head. This, in turn, makes such an X^0-trace fall into the domain of BCC. In Chapter 2, it is shown that since cross-linguistically only a small set of verbs can trigger VI, a problem arises if X^0-movement is constrained only by the ECP, but can be readily explained by BCC plus the modified definition of variables. The environments in which CC takes place constitute a highly limited superset of those for VI. Chapter 3 argues that the similar requirements of the two phenomena on their structural environments results from BCC, while the difference derives from applying the SC and intermediate trace deletion in CC but not in VI. Chapter 4 studies PC, which requires an even looser restriction on the environments. Again, BCC and SC play crucial roles in determining when PC is possible, with the looser constraint attributed to the presence of a resumptive verb filling the D-structure position of the clefted one.

1.2.5 The A/A-bar Distinction and Movement Theory

Anoop Kumar Mahajan

Abstract

This thesis argues for a reformulation of the A/A-bar distinction in the theory of syntax. In the first part of this thesis, it is shown that this reformulation is forced by both theoretical considerations raised by VP internal subject theories and also certain empirical considerations relating to scrambling operations in Hindi. Evidence for the reformulation includes locality constraints on movement, weak crossover phenomena, reconstruction effects and binding properties associated with movement. This evidence also leads to a new approach to the study of scrambling phenomena. It is suggested that scrambling operations that move NPs may belong to two different kinds of syntactic operations—an operation of a functional projection internal to IP (with properties similar to a rule lie Passive) and an operation that adjoins the scrambled NP to a maximal projection (with properties similar to a rule like QR). The approach developed here yields a framework that seems to be promising for the study of variation found with respect to scrambling phenomena in natural languages.

The second part of this thesis argues that a language that does not have overt wh-movement at s-structure may not have wh-movement to SPEC CP at LF either. It is argued that in a language like Hindi, the wh-phrases simply undergo QR at LF. This operation adjoins a wh-phrase to the nearest IP. We show that this approach yields a number of consequences that are desirable in Hindi, a language that at first glance seems to be mixed between a language with overt wh-movement in syntax as well as wh-in-situ. We discuss some aspects of wide scope quantification in Hindi and some other languages and show that the absence of sh-movemnet ot SPEC CP at LF yields certain effects that would be surprising under the approaches that permit wh-movement to SPEC CP at LF.

1.2.6 Structure and Stress in the Phonology of Russian

Janis Leanne Melvold

Abstract

This thesis investigates the interaction between phonology and morphology in the stress system of Russian. Russian has an accent-based stress system, in which morphemes are characterized by two accentural properties: [±accented, ±dominant] Dominant morphemes trigger deaccentuation of the stem to which they attach.

Works surface with one stress, regardless of whether they contain zero or several lexically accented morphemes. I show that the stress rule in Russian applies cyclically, assigning stress to the leftmost accented vowel. Words with an accented root have stress fixed on the root. In the inflectional paradigm of work with unaccented roots, stress alternated between the initial and final vowels, depending on the accentural property of the inflectional suffix. I refer to this as *mobile* stress.

In Chapter 1, I observe an important correlation between stress and the derivational status of words. The generalization is the following: mobile stress occurs only in nonderived word or words derived from a nonsyllabic derivational suffix. To account for this fact, I show that it is crucial to assume not only that the stress rule is cyclic, but that all suffixes are cyclic. My analysis poses a challenge to theories which argue that morphemes which delete previously assigned metrical structure are necessarily cyclic while thoses which preserve previously assigned structure are noncyclic.

I adopt the framework of autosegmental phonology, whereby segmental, syllabification, and metrical processes operate on independent planes linked to a series of timing slots. Since vowels are the only stressable elements in Russian, they are the only elements represented on the stress plane. This allows us to explain the fact that a nonsyllabic morpheme which triggers a cyclic rule on the segmental plane fails to trigger the cyclic stress rule, which operates on the stress plane.

In Chapter 2, I introduce a class of apparent counterexamples to the claim that mobile stress can only occur in words derived from a nonsyllabic suffix. All of the problematic cases involve morphemes which exhibit vowel-zero alternations. I argue that these morphemes contain abstract vowels which consist of a floating feature matrix. Furthermore, I present both segmental and metrical

evidence to show that there are three distinct abstract vowels in Russian.

Chapter 3 addresses certain complexities in the adjectival system, which involve rules of post-accentuation and retraction.

Verbs exhibit stress alternations not found among other lexical categories. These alternations result from vowel sequences which are unique to derived verb stems. In Chapter Four, I show that stress assignment in these verbs involves a complex interaction between the stress rule, syllabification, and vowel truncation rules.

The thesis thus provides strong evidence for current theories of abstract elements in phonology and suggests a different view of cyclicity than the one recently proposed by Halle and Vergnaud (1987) and Halle and Kenstowicz (1989). These authors have argued that only the dominant (stress-deleting) morphemes are cyclic. This thesis shows that both dominant and nondominant morphemes consitute cyclic domains, but the structural properties of a morpheme may prevent application of a cyclic rule on a particular plane.

1.2.7 Issues in the Phonology of Prominence

Scott Meredith

Abstract

A theory of the interaction of phonology and phonetics in the prosodic domains of fundamental frequency, duration, and intensity is developed. Metrical constituent structure in the framework of Halle and Vergnaud 1987 is shown to be the fundamental representation of information of these prosodic domains, integrating phonological categories of tone and syllable weight with phonetic parameters of pitch, duration, and intensity.

The theory is illustrated by reference to three detailed case studies in the prosody of Tibetan, Beijing Mandarin Chinese, and English. For Tibetan, it is shown that the status of syllable nuclei in abstract metrical structure correlates with complexity of surface tonal realization. For Beijing Mandarin Chinese, it is shown that abstract metrical structure describing the location of stress is partially dependent on lexical tone quality of syllables. For English, it is argued that tonological primitives are not interposed between abstract metrical structure and surface fundamental frequency generation.

1.2.8 Negation in Syntax: On the Nature of Functional Categories and Projections

Miren Itziar Laka Mugarza

The central concern of this work is the syntactic nature of negation in Universal Grammar, and its relation to other functional elements in the Syntax.

The study argues that negation is not a syntactic category on its own; rather, it is one of the values of a more abstract syntactic category, nate Σ, which includes other sentence operators, such as affirmation and emphasis (Chapter 2). It is also argued that the syntactic feature (negation) surfaces in other syntactic categories besides Σ. In particular, the existence of (N) (negative). Complementizers is defended; this accounts for a range of phenomena in various languages: across-the-clause licensing of Negative Polarity Items in English, the distribution of the -nik complementizer in Basque, and the nature of Dubitative Subjunctive in Romance (Chapter 3).

Chapter 1 argues for the existence of a universal requirement that inflectional heads such as negation (Σ) must be c-commanded by the syntactic head Tense at S-structure. Assuming this requirement, a unified account is provided for apparently unrelated phenomena induced by negation in English and Basque.

Chapter 2 also presents an account of the phenomenon of "double negation" in Romance, in terms of the category Σ and its projection ΣP. It is argued that preverbal instance of the elements that induce "double negation," such as nadie, nada ningun etc., involve movement of the item in question to the specifier of ΣP, which is headed by a phonologically non-overt negative element. Also, "yes" and "no" answers are discussed in relation to the Σ Projection. It is argued that such answers make crucial use of this syntactic category, and parametric differences between the three languages under study (English, Spanish and Basque) are considered in support of the hypothesis.

The structure of Inflection in Spanish is considered in Chapter 3. The nature of Subjunctive and its relation to Negation and Imperative Mood is discussed. A proposal is made concerning the inflectional structure of Spanish, this proposal is shown to generate exhaustively the entire verbal paradigm of this language, and it predicts a number of language-particular properties of Spanish.