

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 obtaining a better grasp of the mental capacities of human beings through the study of the nature, acquisition and use of language. Language is a uniquely human faculty in that only humans appear to be capable of learning and using a language and that every normal human acquires knowledge of one or more languages during his/her lifetime. This knowledge is represented somehow in the speaker's mind, which is a special organ located in the human brain. Viewed from this vantage point, the central issues of linguistics research are:

1. What is the nature of this knowledge? What do speakers of a particular language - Lattvian, Spanish or Walpiri - know, and how does knowledge of one language differ from and resemble that of some other 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 the storage, acquisition and utilization of linguistic knowledge?

There are considerable differences in our ability to answer these questions. It would seem that at present we have advanced more with regard to question 1 and least with question 4. These differences are also reflected in the research conducted by the group. At this time, it is most heavily concentrated on issues concerned with the nature of the knowledge that characterizes fluent speakers of various languages. Yet the other three questions have not been over-

looked, and significant efforts are being devoted to their solution.

The study of these topics is being carried out along a number of parallel lines. On the one hand, linguists have investigated the principles by means of which words are concatenated to form meaningful sentences. These principles have been the primary domain of inquiry of 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 is likely to become more prominent in the future.

1.2 Abstracts of Dissertations

All of 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 Towards a Theory of Phonological Alphabets

Andrea Calabrese

Abstract

One of the basic tenets of phonology is that every language has an inventory of phonological segments used to distinguish lexical items in underlying representations. I call the inventory of phonological segments of a given language the *phonological alphabet* of that language. Each phonological alphabet is always organized

according to a precise pattern and has a well-defined structure. In this thesis, I argue that negative conditions on feature co-occurrence are the correct means to represent the structure of a phonological alphabet. I call these negative conditions on feature co-occurrence *filters*. An example of filter is the following: (i)*[+low, -back]. (i) represents the fact that the feature values [+low] and [-back] *cannot* occur together in the same feature bundle. I hypothesize that when a filter holds in a given language, the phonological segment which is characterized by the configuration of features disallowed by the filter is absent from the phonological alphabet of that language. Thus, I represent the fact that the low front vowel æ is absent from the phonological alphabet of Italian by hypothesizing that the filter *[+low, -back] holds in Italian.

I propose that there is a set of filters provided by Universal Grammar, which I call *UG filters*. I propose that UG filters are hierarchically ordered: the more complex a phonological segment is, the higher the filter that excludes it is in the hierarchy. The hierarchy of UG filters is also intended to account for Jakobson's (1941) observations on language learning and loss, as well as his observations on the universal implications about the structure of phonological alphabets.

In chapter 1, I demonstrate that hierarchically ordered UG filters are needed to represent generalizations about phonological alphabets. In this chapter, I also argue that Universal Grammar provides a set of rules that have the function of repairing configurations of features which violate filters. I call these rules *clean up rules*. By hypothesizing an interaction among phonological rules, filters and clean up rules, I account for several phonological phenomena in a straightforward way. Finally, I attempt to account for situations in which filters can block the application of rules and how configurations of features disallowed by filters may surface without being repaired by clean up rules. In doing this, I also present some arguments against the Structure Preservation Principle proposed by Kiparsky (1984, 1985).

In chapter 2, I discuss the Theory of Underspecification. The central idea of the Theory

of Underspecification is that not all of the feature values characterizing a segment are phonologically relevant, and that the phonologically irrelevant feature values are underlyingly unspecified. In this chapter, I argue that the feature values which are phonologically relevant in the segments of a given phonological alphabet are determined by the structure of that phonological alphabet, and specifically by the UG filters which are underlyingly violated in that phonological alphabet. In this chapter, I also discuss the Theory of Underspecification proposed by Archangeli (1984) and Archangeli and Pulleyblank (1986) and the Theory of Underspecification proposed by Steriade (1987).

In chapter 3, I argue that language-specific filters are needed in addition to the UF filters in order to account for the structure of phonological alphabets. These language specific filters can be acquired only through negative evidence and have a very marginal phonological status. I will show that they do not play a role in the Theory of Underspecification.

In chapter 4, I discuss the different clean up rules which I propose. In this chapter, some modification of the formalism adopted to represent them will be proposed.

1.2.2 Restructuring Parameters and Complex Predicates: A Transformational Approach

Hyon Sook Choe

Abstract

This thesis discusses the two types of complex predicate — morphologically-complex predicates (Type I) and "restructured" predicates composed of morphologically-independent predicates (cf. Rizzi (1982); Type II). It introduces and develops a theory of complex predicates/works. The theoretical framework is a recent development of the transformational grammar — the principles-parameters approach to Universal Grammar (UG) (cf. Chomsky (1986a and b)).

We view complex predicates as derived through transformations operating on minimal elements. Type II complex predicates are obtained through a head-to-head transformation, which we call the Restructuring Rule (RR). The RR affects categories in a certain way, linking them, and thereby giving rise to Type II complex words, whose properties and syntax characterize the "restructuring" phenomenon discussed in the literature. Type I and theoretical reasons, head-movement is reunderstood as having a more restricted function than the one assumed in the literature: Head-movement is instantiated as adjunction but not substitution. Head-adjunction creates the segments of both target and trigger minimal categories, forming chains called H-chains. Empirical data suggest that Type I complex predicates are also formed through RR Accompanied by head-movement, which we call overt RR. Consequently, complex predicates are obtained through head-movement, (move-head), RR (affect-category), or overt RR (move-category); complex predicates form three different types of complex word according to their syntactic derivations. Move-head operates on terminal strings (heads), affect-category on head in X-bar theory's sense (X-heads), and move-category on both heads and X-heads. Those head-to-head transformations imply a certain concept of tree structure (that differs from the usual concept of tree structure), under which a head and the X-head projected from the head are independent entities of each other, subject to different principles of grammar. The proposed head-to-head transformations assume the projection principles on X-heads and the theta-criterion on X-heads, which apply to both lexical (X-)heads and functional (X-)heads such as C and I, and which apply to categories but not to segments derived through head-movement.

As for the motivations of head-to-head transformations, we suggest, under a certain theory of transformation called a licensing theory of transformation, that head-movement is motivated by certain morphological dependency of a head. In contrast to the current assumption, the targets of head-movement are viewed as very restricted: Heads move to lexical heads that L-mark (but not to functional heads) and the latter (targets) govern the former (the Revised

Head Movement Constraint). This restricted property of head-movement is viewed as obeying the ECP in terms of antecedent-government. RR (affect/move-category) is motivated by the certain categorical dependency of an X-head, whose effects are read off at LF. RR is governed by the Lexical properties of predicates or of Lexical items, and a trigger of RR is semantically and/or phonologically poorer than its target. RR triggers "overlapping" among categories and positions within an RR domain, and/or change configurational structure, obeying certain RR conventions. Those notions of RR and head-movement lead to certain morphological, syntactic and semantic differences among the three different types of complex words/predicates. The levels of rule application vary; depending on the parameterization of the levels of rule application, the syntax of complex predicates differ.

The proposed notions of RR and head-movement not only explain the "restructuring" phenomenon and Type I complex predicates, but also offer new and deep insight into various linguistic phenomena and constructions discussed in the literature: I-V amalgamation, Aux-to COMP-construction in Italian, ACC-*ing* construction, V-2 order and Aux-inversion, *whiz* deletion, passive and causative construction, "neg-raising" (also cf. Korean "restructuring") and a configurationality issue. The discussions on these constructions/phenomena (in chapter 4) show that specific instantiations of a phenomenon in various languages are surface language-specific instantiations of the deep operations of head-to-head transformations.

Some consequences and results of our discussions are: First, "restructuring," which is understood as V-to-V RR effects, is neither language-specific nor restricted to pro-drop languages (cf. Kayne's (1980) conjecture). Second, syntactically-derived morphologically-complex words are ambiguous: they are derived either by overt RR or by head-movement; the proposed notions of RR and head-movement explain certain differences between the two types of Type I complex predicate in morphology, syntax, and semantics. Third, the proposal advocates a certain version of the weak morphology and to semantics, suggesting an independently-

motivated morphological component that interacts with the syntactic component. Fourth, the proposal results in a very restricted theory of grammar, which includes the wide interpretation of the projection principle (together with the projection principle on X-heads), which applies to A or A-bar positions, and which also holds at a certain sublevel of PF (morphological structure). The wide interpretation of the projection principle leads us to reconsider the usual assumption that X-bar theory holds at every level of syntactic representation (D- and S-structure, LF, and a sublevel of PF).

1.2.3 The Phonological Derivation and Behavior of Nasal Glides

Rosario Lorenza Trigo Ferre

Abstract

This thesis presents a unified phonological approach to the emergence of nasal vowels from the reduction of vowel plus nasal consonant sequences (in our terms nasal "absorption") in a number of unrelated languages. Nasal "absorption" is studied in the context of other phenomena which play a role in this process: the appearance of optional weakly articulated velar nasals after nasalized vowels, the appearance of nasalized "transitions" or of nasal stops between nasal vowels and certain consonants, the exceptional susceptibility to "absorption" processes and to processes which neutralize a consonant's point of articulation which certain nasal consonants have, depending on their position in the word.

I claim that nasal "absorption" occurs when the oral occlusion of a nasal stop is removed or weakened considerably to the point where it is a glide. A nasal without any place features, [N], is shown to derive by a process which simultaneously reduces obstruent stops to glottal stops in Japanese. Material from Chinese, Caribbean Spanish and Choctaw are used to provide supporting evidence for the role of [N] in nasal "absorption." The nasals which are most susceptible to "absorption" are shown to be

those which are most susceptible to weakening processes that diminish the magnitude of their oral occlusion or remove that occlusion altogether.

I show that the reduction of nasal stops to [N] causes spreading of nasalization from the nasal onto neighboring vowels and need not be accompanied by the deletion of the nasal segment, though it often is. When [N] is not deleted, it is often taken for a weakly articulated velar nasal, either because it is actually velarized in surface representation or because of a systematic transcription error. I argue that in many languages nasals in homorganic NC stop clusters do not undergo "absorption" because "absorption" targets [N] in these languages. Place assimilation is shown to be a potentially feature changing operation which may occur before or after the creation of [N].

The analysis of nasal "absorption" which posits an intermediate stage with a floating [+nasal] autosegment leads to undesirable predictions. I question the basis upon which "floating" nasal features have been assumed to exist in Coatzacoapan Mixtec and Terena where the domain of nasalization is predictable on the assumption that the trigger of nasalization is properly ordered with respect to the rest of the segments in the word at all stages in the derivation. Certain facts of Aguaruna provide the basis for an argument in favor of representing derivationally ambiguous forms as having more than one underlying form. Thus, the fact that in certain cases the exact ordering of a nasal element in the word cannot be known does not constitute sufficient evidence for the existence of a "floating" nasal feature.

I establish the existence of vocalic nasal glides and continuants derived from nasal stops in Basari. The possibility that vocalic nasal glides may participate in "absorption" processes is also considered.

1.2.4 Investigations Into Polish Morphology and Phonology

Ewa Czaykowska Higgins

Abstract

This study investigates the relationship between morphology and phonology. It addresses two interrelated but distinct questions: first, what are the morphological devices and processes required to generate the input to the phonology, and second, how do the rules of the phonology interact with the morphological structure? Answers to these questions are provided by a detailed examination of the morphology and phonology of Polish. It is argued that morphology is distinct and separate from phonology, and that phonology operates on objects which are created by the morphology. The phonology consists of two distinct components: word-level and phrase-level phonology. The word-level component involves processes that apply word-internally and is organized into two blocks, one of cyclic and the other of noncyclic rules. The phrase-level component involves processes not limited to the word.

This thesis is organized as a series of three studies of particular topics in Polish morphology and phonology. The first study is concerned with the morphological structure of Polish verbs. It is argued that the Polish verb has a four-part constituent structure, consisting of a Class-stem, a Verbalizing Suffix Stem, a Tense Marker Stem, and a Person/Number Stem. The Class-stem, which carries the lexical semantic content of a verb, is specified for membership in a particular inflectional class; inflectional and some derivational properties of a stem are predictable from class membership. It is proposed that word-formation rules which derive denominal or secondary imperfective Class-stems are conversion rules which change a stem's class membership; these rules may involve concomitant affixation or phonological alternations. The discussion of verbs illustrates the fact that morphological structure is not necessarily isomorphic either with semantics or phonology. For example, Polish prefixes are argued to be phonological words, even though morphologically, they are included in the verb word.

The second study focuses on the cyclic phonological alternations commonly referred to as palatalizations. It is argued that most of the palatalization rules are morpholog-

ically, rather than phonologically, conditioned, but that they are nevertheless ordered in the cyclic component of the phonology. Several vowel alternations are shown to be lexically conditioned in that, although they apply in phonologically well-defined environments, they apply in only a subset of forms which meet their structural descriptions. Thus it is concluded that the phonology of Polish is governed by more idiosyncratic behaviour than previous research had assumed.

The third study deals with the processes associated with the orthographic nasal vowels of Polish. Taking into account recent work in hierarchical feature representations and underlying nasal diphthongs whose first member is a mid vowel and whose second member is a placeless nasal glide. The similar behaviour of nasal glides and nasal stops is accounted for by assuming that nasal stops can lose their place of articulation specification. Both the underlying and the derived placeless nasals receive place features by rules of assimilation or by redundancy rules. The nasal processes provide evidence for the noncyclic word-level component and the phrase-level component of the phonology.

1.2.5 Topics in Korean Syntax: Phrase Structure, Variable Binding and Movement

Myung-Yoon Kang

Abstract

This thesis has two parts: Part 1 considers problems related to the phrase structure of Korean; Part 2 investigates problems related to Korean **enu ... na** construction. Part 1 consists of chapters 2 and 3; Part 2 consists of chapters 4 and 5.

In chapter 2, we discuss "VP-focus" constructions and "Long-form" negation constructions in Korean. It will be shown that these Korean constructions utilize the "VP-shell" structure proposed in Larson (1988), with certain extensions. It will also be argued that the element **-ki** in Korean can be a "nominalizer" of a VP. The Korean pro-

gressive construction involving **-ko issp** will be analyzed as another instance of the "VP-shell" structure. The notion "morphological closure," a crucial concept in understanding "agglutinating" languages like Korean, will also be introduced in this chapter.

In chapter 3, what is often called "nominalization" structures in Korean, involving **-ki/ci**, **-l/n kes**, **-l/n ci**, **-1 su**, etc., will be investigated. It will be shown that they are not involved in a category-changing process and that they must be viewed as an "NP-shell." It will be argued however that these "NP-shells" must also be viewed as complementizers or simply as syntactic features at D- or S-structure. Hence, the main point of the chapter is that the level of representation at which these elements are analyzed as NP-shells and the level of representation at which these are analyzed as complementizers or as syntactic features must be distinguished. A new level of representation, which is called "Pre-D-structure," will be proposed as a level where these elements are represented as NP-shells. These NP-shells, then, will be functionally determined to be either complementizers or syntactic features during the mapping from the Pre-D-structure to D-Structure.

chapter 4 will discuss the variable binding problems in the Korean **enu...na** construction, some of which will be identified as a particular type of donkey sentence and others of which will be identified as "Specifier Binding" constructions. It will be argued that the Korean data support the "Indirect Binding" approach of Haik (1984).

In the final chapter of this thesis, it will be shown that there are two important constraints in the positions that the NP that **enu** is the specifier of (we will call it "**enu NP**") can occupy within the relative clause: (i) the "Overt Subject Constraint" (OSC) and (ii) the Wh-island Constraint. I will then try to derive these constraints by assuming an LF movement of **enu NP** to a position that can be governed by the element **-na**. It will be argued that the first of these constraints will be derivable with certain assumptions about the specifiers and projections and with a certain revision of the notion of barrier, following and extended version of Fukui &

Speas (1986); and that the second of these constraints will be derivable if we adopt the concept "Relativized Minimality," proposed by Rizzi (1987).

1.2.6 Accent and Syllable Structure in Passamaquoddy

Philip Stanley LeSourd

Abstract

The focus of this study is a set of related problems in the phonology of Passamaquoddy involving stress assignment and syncope. Both of these processes make a distinction between "stressable" and "unstressable" vowels. In essence the stressable vowels are those which are available to the stress rules, while the unstressable vowels may be targets of syncope. Stress is assigned by a right-to-left alternating stress rule and a rule assigning stress to initial syllables; but the surface stress patterns of the language are more complex than one would expect on the basis of these principles alone, since only stressable vowels participate in stress assignment. Matters are further complicated by the fact that particular underlying vowels which are treated as unstressable in some positions come to be treated as stressable when they occur in other contexts.

Whether a basically unstressable vowel is counted or skipped over in assigning stress is determined by a disparate set of conditions. A striking part of this system is a principle which makes an unstressable vowel stressable if it occupies an even-numbered position in a series of such vowels, counting from left to right. Thus stress assignment in Passamaquoddy appears to be determined by syllable counts carried out both from right to left and from left to right. Unstressable vowels which do not become stressable in the course of derivations are subject to syncope in a diverse set of environments, reflecting the application of five distinct rules.

Three theories of the stressable/unstressable distinction are considered in this work. The first theory uses a diacritic feature [strong] to

distinguish between stressable and unstressable vowels. The second approach posits an additional level of metrical structure, in addition to the foot and word levels generally assumed in metrical accounts of stress assignment, in order to represent stressable vowels as metrically more prominent than unstressable vowels. The third account exploits the descriptive power of theories of phonology which recognize a distinction between a segmental tier and a CV or timing tier. The central hypothesis of this CV theory of stressability is that unstressable vowels are floating segments at the point in derivations at which the rules of stress assignment and syncope are applicable. Adopting this hypothesis allows us to explain some of the conditions which determine stressability by relating them to the principles of syllabification in Passamaquoddy. The CV account also finds empirical support in the facts of stress and syncope in words which contain underlying vowel sequences.

Other aspects of the phonology of Passamaquoddy which are treated in some detail include the phonetic distribution of long and short vowels, a devoicing process which affects initial nonsyllabic sonorants, a morphologically governed system of vowel mutations known as Initial Change, and a rule deleting final vowels which triggers adjustments in stress and intonation.

1.2.7 Semantic and Syntactic Aspects of Romance Sentential Complementation

Anne Rochette

Abstract

This dissertation is a study of different semantic and syntactic aspects of sentential complementation in the Romance languages. A general theory of sentential complementation is developed to account both for the numerous syntactic differences found among the different types of sentential complements and for the selectional properties of the semantic classes of main predicates that select these complements.

In chapter 1, a semantic classification of main predicates is introduced. Three main classes of predicates are distinguished: *effective*, *emotive* and *propositional* predicates. The major leading hypothesis of this dissertation is also introduced in that chapter. It is argued that the three semantic classes of predicates s-select distinct semantic types of sentential complements which also correspond to distinct structural types of complements.

Chapter 2 is a study of the complements to effective verbs. It is argued that the effective verbs select the semantic type *action* and that the structural realization of *action* is a projection of the category *V*, usually an infinitival complement in Romance. A good part of the chapter is concerned with the analysis of the so-called restructuring phenomenon. It is argued that the crucial property underlying restructuring is the possibility for certain matrix verbs to not have an *E*-position in their thematic grids. When these matrix INFL can 0-bind the *E* of the embedded predicate. It is also argued that the propositions that introduce complements to effective verbs should be analyzed as instances of Case spelling rather than as complementizers. With some effective verbs, *action* can also be realized as a projection of the category *N*. It is shown that these complements are necessarily interpreted as "concealed actions."

Chapter 3 is a study of the complements to emotive verbs. It is argued that the emotive verbs select the semantic type *event* and that the structural realization of *event* is a projection of the category INFL. Depending on the value of the feature (Tense) under INFL, the complement will either appear as a subjunctive complement or as an infinitival complement. Different phenomena characteristic of subjunctive complements are examined, such as the well-known obviative phenomenon and other transparency effects which are analyzed as following from the fact that the head of the complement is INFL. It is also argued that the possible presence of certain types of sentential operators (factivity, modality, etc.) may create some opacity effects for these subjunctive complements. Certain syntactic constructions that appear to distinguish the complements to emotive verbs from the other types of com-

plements are also studied in that chapter and it is argued in each case that their existence provides further evidence in support of a structural distinction of the complements to emotive verbs.

In chapter 4, the complements to propositional verbs are examined. It is argued that propositional verbs select the semantic type *proposition* and that the structural realization of *proposition* is normally a projection of the category COMP. It is shown that this claim accounts for the Romance infinitival complements to propositional verbs but appears to be contradicted by the behavior of the English infinitival complements which are often analyzed as IP's rather than CP's. An analysis in terms of Case-marking differences between English and the Romance languages is developed to account for this difference.

1.2.8 Locality Principles in Syntax and In Parsing

Amy Sara Weinberg

Abstract

This thesis has three main aims. The first is to present criteria that can be used to constrain the class of natural language comprehension devices. We argue that a certain class of parsers, LR(k) bounded context processors, can *explain* why grammars for natural languages must contain a Subjacency constraint. More generally, we argue that the ability to provide a functional explanation for linguistic constraints is a major criterion for judging the adequacy of classes of processing devices. In service of the first goal, we also consider several psycholinguistic experiments that have been taken as incompatible with the LR(k) approach and show that a more refined LR(k) theory (the Minimal Commitment Theory) can deal with these cases in an illuminating way.

Our second aim is to show that the theory of parsing forms an integral part of grammatical theory not only in the sense of providing a functional motivation for one of the theory's major constraints, but also in its ability to explain otherwise mysterious properties of subjacency. In particular, I claim that a

parsing theoretic approach can explain why subjacency applied at S-structure, why it applies to movement, parasitic gaps, and constitute a natural class given only formal or linguistic substantive criteria. Thus the theory of parsing becomes an integral part of grammatical theory in that it, just like the functional demand of language learning dictates the form that grammars of natural languages can take.

The final aim of this theory is to propose an adequate formal theory of Subjacency and the Empty Category Principle (ECP). Following WAHL(forthcoming), I propose to separate the ECP into two parts: a condition of lexical government and generalized binding. These conditions apply conjunctively and in separate parts of the grammar. I argue for this approach by constructions. These conditions interact with the proposed subjacency constraint in that subjacency forces overt syntactic movement to be local. Local movement is allowed only if its output can satisfy both parts of the ECP. We argue that this approach yields a revealing treatment of the standard syntactic island effects, the Condition on Extraction Domains, movement form WPs, and the parasitic gap construction.

1.2.9 Multiple Case Assignments

Katherine McCreight Young

Abstract

We examine the data of multiple case assignments in an attempt to determine the nature of the mapping between abstract case and morphological case. We consider three potential sources of multiple case: percolation, agreement, and assignment. We argue that a potential multiple case assignment may be resolved by prevention of a structural case assignment: by prevention of case agreement: by reduction of assigned case features: or by morphological accommodation of the multiple cases.

We claim that accommodation of a multiple case by morphologically neutral forms reflects a general morphological process. We suggest that case assignment be represented

as assignment of a positive case feature value, with morphologically neutral forms represented in the lexicon with underspecified case feature values.

We claim that case agreement between a trace and an antecedent in a non-argument position is forced by cyclic application of the Case Filter. This case transmission require-

ment, together with an agreement requirement between a relative pronoun and an empty pronominal head, creates case matching effects in free relatives. Reduction of such multiple case assignment is subject to a semantic constraint of recoverability, and creates resolution hierarchies of the general form, less informative cases < more informative cases.

