THE MORPHOLOGY-SYNTAX INTERFACE

Amaya Mendikoetxea & Myriam Uribe-Etxebarria
Universidad Autónoma de Madrid / University of California, Irvine

The theoretical developments that have taken place in generative linguistics in the last decades have crucially altered many of the assumptions of earlier work, leading to major changes in the basic model of the grammar adopted within this framework. While these developments have necessarily influenced our understanding of all aspects of linguistic research, one of the areas that has perhaps been more radically affected by these changes is the study of morphological operations. The history of morphology within the generative tradition is characterized by a tension between lexicalist and syntactic approaches. Although lexicalist approaches to morphology gained many partisans during the 70s and the 80s, the developments in the theory of syntax in the last decade have led to a change in the way in which morphological operations are now understood, and an increasingly more important role has been attributed to syntax in accounting for various fundamental properties of morphological processes.

The purpose of this volume is to provide an overview of some of the most relevant aspects concerning the connection between syntax and morphology by offering a representative sample of the latest work on the morphology-syntax interface. In this introductory chapter, we present a brief survey of the major developments concerning morphological theory within generative grammar (section 1) as an introduction to the thirteen papers that follow, which we summarize in section 2. Our purpose in section 1 is simply to draw attention to some of the questions that bear more directly on the issues discussed in the collection of papers in this volume and to show the motivations behind the development of some leading hypotheses in the field.[1]

1. Where Morphology meets Syntax and viceversa

1.1. The tension between lexicalist and syntactic approaches to morphology

One of the central issues in relation to the morphology-syntax interaction is to establish what morphological operations take place in the syntax and what mor-

(1) Due to space limitations we are forced to leave aside in section 1 important contributions, theories and frameworks that are not of immediate relevance for the particular approach developed in the papers that follow. For a more complete survey of the development of morphological theory within generative grammar as well as for a recent overview of questions that are currently at the forefront of research in morphology see, among others, Spencer (1991), Spencer & Zwicky (1997) and references therein.

[ASJU Geh 40, 1997, xi-xxxviii]
http://www.ehu.es/ojs/index.php/asju

phological operations take place in the Lexicon. This problem is implicitly or explicitly present in all the papers in this volume, but it was not until a Lexicon was introduced in the theory as an independent component of the grammar that the question could arise in this form. Before a Lexicon was introduced into the Standard Theory in *Aspects of the Theory of Syntax* (Chomsky 1965), derivational and inflectional morphology was done necessarily in the syntax. The incorporation of the Lexicon in *Aspects* did not immediately bring about a change concerning the way in which morphological operations were understood. The Lexicon in *Aspects* was basically an inventory of lexical items, with their (idiosyncratic) phonetic, semantic, and syntactic properties. Morphological processes in *Aspects* were taken care of by standard syntactic and phonological rules. Lexical items were specified for inherent and non-inherent features: e.g. German nouns were inherently specified for gender and declension type, while other features such as number and Case were non-inherent. Inflectional morphology involved the addition of non-inherent features by means of syntactic transformations.[2] As for derivational morphology, while verbs like *refuse* and *destroy* appeared as lexical entries in the Lexicon, the corresponding nouns like *refusal* and *destruction* were not listed as such. Rather, they were derived through nominalization rules in the syntax creating elements like *nom^destroy* and *nom^refuse*, which then became *destruction* and *refusal*, respectively, by means of phonological rules (which also dealt with allomorphic variation). The introduction of a Lexicon, separate and distinct from rewriting rules, allowed a simplification of the categorial component and set the basis for the way in which word formation processes, and morphological operations in general, were to be approached in subsequent work in early generative grammar.[3]

It was not until "Remarks on Nominalization" (Chomsky 1970) that lexicalist approaches to the morphology-syntax connection started to emerge. In "Remarks", Chomsky argued that some derived nouns like *destruction* should be derived lexically, rather than transformationally. His position was that the use of transformations should be restricted to capture the relations between linguistic forms in regular and productive processes; operations that make use of idiosyncratic information and are not totally productive and transparent should belong in the Lexicon.[4] Thus, nouns like *destruction* and verbs like *destroy* were proposed to be related in the Lexicon rather than the syntax because of the relative non-productivity of the relations between these verbs and their derived nouns, as well as because of the idiosyncratic semantic relation between these two categories: the verb and its corresponding derived

(2) The distinction between inherent and non-inherent features led to a revision of the traditional "item-and-arrangement approach": non-inherent properties, which corresponded to independent morphemes within the "item-and-arrangement" approach, were reduced to features in *Aspects*. Problems to do with the fact that "morphemes" are often not phonetically realized, as well as problems concerning the order of morphemes, did not arise within the approach adopted in *Aspects*.

(3) Two major theoretical approaches emerged after the publication of *Aspects*: The Lexicalist Hypothesis that originated with Chomsky (1970) (see below) and the approach that came to be known as Generative Semantics, which departed from some of the earlier assumption regarding the model of the grammar in several important respects, in particular, with regard to the existence of the level of Deep Structure. See, among others, Lakoff (1968), Lakoff & Ross (1967), and McCawley (1968); the reader is also referred to Newmeyer (1980) for an overview of this framework.

(4) For discussions on the notion of productivity see the works of Aronoff (1976) and Lieber (1992), among others, which represent different approaches to the matter.

nominal. The two types of processes —lexical and transformational— are illustrated by the contrast between gerundive nominalizations (GN) *(Mary's giving a book to Ann)* and derived nominalizations (DN) *(Mary's gift of a book to Ann)*. While GNs are highly productive, regular and predictable, DNs are mostly unproductive and idiosyncratic. The former are derived by the application of syntactic transformations, while at least some DNs are listed in the Lexicon rather than transformationally derived. Still, DNs are somehow related to their corresponding verbs and gerundivals and they show many of their properties. The morphological differences are captured in *Remarks* by a set of lexical redundancy rules. The introduction of the more abstract and simple X-bar schemata allows Chomsky to account for the syntactic parallelisms between these three types of expressions (verbs, DNs and GNs) in a uniform way.

The idea that some DNs belong in the Lexicon rather than the syntax came to be known as the *lexicalist hypothesis* to derivational morphology. There are two theoretical positions within this lexicalist approach to derivational processes, which are conceptually different, though often not distinguished: (i) what is generally known as the *weak lexicalist hypothesis*, by which DNs are mostly lexically derived, but which could admit some transformational derivations of DNs, and (ii) what Perlmutter (1988) refers to as the *'split morphology' hypothesis*, which denies the possibility that there are DNs that can be derived by means of transformations.[5] Some of the works dealing with these issues can be understood as advocating one or the other position. In this regard, Chomsky's "Remarks" can be read in either of the two ways. The same applies to Anderson's (1982) work, in which what is derivational and what is inflectional is not independently characterized: those processes which happen to be syntactically relevant are inflectional and those which are not, in contrast, are derivational and take place in a morphological component; but what is inflectional in one language could be taken to be derivational in another language and viceversa (see also Lieber 1992).

The lexicalist hypothesis which emerged from "Remarks" paved the way, finally, for another interpretation of the syntax-morphology relation, by which morphological operations in general —whether they are inflectional or derivational— take place in the Lexicon: i.e. transformational rules cannot refer to word-internal processes. This is known as the *strong lexicalist hypothesis*, whose origins are found in Jackendoff's (1972) *(Extended) Lexicalist Hypothesis,* and which gained strong support in the 70s and 80s (see e.g. Lapointe 1980, 1988). Some advocates of the strong lexicalist hypothesis like Selkirk (1982) and Di Sciullo and Williams (1987), however, allow syntactic rules to refer to morphological features. The strong lexicalist hypothesis underlies to a wider or a lesser extent several proposals concerning the relation between morphology and phonology (as well as other components of the grammar), to which we now turn.

The study of the interaction between morphological and phonological operations during the 70s gave rise to a more elaborated theory of word formation processes as well as to a more sophisticated view of the structure of the Lexicon in what is known as the *Level Ordering Hypothesis,* by which the Lexicon is divided into a series

(5) For related discussion see Hendrick (1995) and references therein.

of levels or strata, each with its own set of affixes (Allen 1978, Siegel 1979).[6] This idea was further developed in the early 80s in the framework that came to be known as the Theory of Lexical Phonology and Morphology, originally put forth by Kiparsky (1982), which presented a detailed theory of a level-ordered Lexicon on the basis of the interaction between phonological and morphological processes. Kiparsky, on the basis of work carried out by Mascaró (1976) and Pesetsky (1979) concerning the cyclic application of phonological rules, argued that cyclicity effects in phonology could be straightforwardly derived by appealing to a level ordered Lexicon, along the lines of the Level Ordering Hypothesis. Within this approach, each of the levels into which the Lexicon is divided contains a set of morphological rules and a related set of phonological operations. Whenever a morphological operation of a given level takes place, the output of this word formation operation is submitted to the set of phonological rules that are associated with that lexical level. Within this model, Kiparsky establishes a clear cut distinction between (i) phonological rules that apply (at one or more levels) in the Lexicon, and (ii) phonological rules that apply after words have been inserted into syntactic structures. The former, which he refers to as the rules of *lexical phonology,* are "intrinsically cyclic because they reapply after each step of word-formation at their morphological level"; the latter, which he refers to as the rules of *postlexical phonology,* are "intrinsically noncyclic" (*op. cit.*: 131-2).[7] Unlike the rules of lexical phonology, the rules of postlexical phonology may apply word-internally as well as across word-boundaries; they are not affected by the internal structure of words or by the nature of the internal components of the word in which they apply.

The idea of a level ordered Lexicon allowed Kiparsky to approach some questions in relation to the possible ordering of affixes (the order of affixes is determined by what level they belong to), as well as regarding existent and inexistent forms and blocking effects, providing a partial answer to some of the questions previously posed by Halle (1973). This approach to the Lexicon was further developed in the work of Halle and Mohanan (1985) and Mohanan (1982, 1986), and enjoyed a great deal of success during the eighties. The proposal defended in some of these works that (some aspects of) inflectional morphology —such as verbal inflection and Case— were located in the Lexicon provided support for a strong lexicalist hypothesis and for the view that morphology was a lexical phenomenon.[8]

(6) Siegel (1979) distinguishes between two types of derivational affixes on the basis on Chomsky & Halle's (1968) distinction between two types of morphological boundaries and argues that the Lexicon should be divided into two blocks, each containing one class of affixes. Allen (1978) analyzes compounding and inflectional affixes, as well as derivational affixes, and argues that the Lexicon should be divided into four strata, each with its own set of rules: level I and level II for the two types of derivational affixes, level III for compounding and level IV for inflectional morphology.

(7) While Kiparsky (1982) takes the rules of lexical phonology to be cyclic, this view is not shared by Mohanan & Mohanan (1984), who argued that all lexical strata in Malayalam are not cyclic, or by Halle & Mohanan (1985), who argued that Stratum 2 in English is not cyclic. See Hualde (1988), also within the framework of Lexical Phonology for arguments, that in Basque the phonological rules of a given level do not have a chance to apply every time a morphological operation of that Level applies but rather only once, after all the morphological processes associated with that level have taken place. For the proposal that lexical strata may be either cyclic or non-cyclic, see Halle & Mohanan *(op. cit.)* and Mohanan (1986).

(8) See, among others, Sproat (1985) and Fabb (1988) for an overview of the issues that cast doubt on Lexical Phonology in the mid and late 80s.

The incorporation of lexicalist hypotheses, in their different conceptions, into the grammar has led to new ways of approaching the relation between morphology, syntax and phonology. Regarding the model of the grammar, the consequences of adopting one or the other hypothesis are vast. If the split morphology hypothesis is adopted, the relation between morphology and syntax is restricted to processes dealing with inflectional morphology. If the strong lexicalist hypothesis is adopted, the relation between syntax and morphology is necessarily limited. The weak lexicalist hypothesis allows for a wide variety of morphological operations in the syntax, whether they are derivational or inflectional (with anything idiosyncratic and unproductive restricted to the Lexicon). Linguists working within the weak lexicalist hypothesis vary in the role they attribute to syntactic principles in accounting for morphological operations; they are divided into those who believe that specific morphological principles are still required (cf. Baker 1988) and those for whom syntactic principles suffice to account for morphological operations (c.f. Lieber 1992). In the next sections, we deal with some current issues concerning the relation between syntax and morphology in the late 80s and 90s, which are of direct relevance for the topics dealt with in the different papers in this volume.

1.2. Morphological operations and complex word formation in the Principles and Parameters model

One of the basic questions concerning the relation between syntax and morphology is how to provide a structural representation for morphologically complex words. From the early 80s, there have been proposals in the literature in favor of generating the morphological structure of complex words by means of X-bar principles, along the lines proposed for syntactic structure (see e.g. Selkirk 1982 and Lieber 1992). Williams (1981), in particular, argued that words, like phrases, are headed, with the head as the rightmost morpheme of the complex form (the *Righthand Head Rule).*[9] In addition to derivational affixes, inflectional affixes started to be analyzed as heads projecting their own phrases during the 80s. This view gained further support with the development of an approach where the status of heads was granted to functional elements such as Det, Tense, Comp and so on, some of which often show up as inflectional affixes in many languages.

The idea that inflectional affixes are generated in independent syntactic positions is already present in early work in generative grammar. However, it is not until the 80s that functional heads like C(omplementizer) and I(nflection) are assimilated into the X-bar theoretic framework as elements heading their own projections: CP and IP. These projections, introduced by Chomsky (1986) in *Barriers*, replace the earlier S' and S categories, respectively, thus changing some of the previous assumptions regarding clausal architecture. At the same time, functional XPs are also suggested for nominal projections with the development of Determiner Phrases (DPs) (Abney 1987, Torrego 1986, among others). The hypothesis that categories like CP and DP have available

(9) See Selkirk (1982) and Di Sciullo & Williams (1987) for proposals which relativize the notion of head by allowing the percolation of features of non-heads in certain contexts.

specifier positions led to a revision of standard analyses of wh-movement and the structure of nominal projections towards the end of the decade. As for IP, the study of the properties of inflectional heads soon led to modifications of the IP system in *Barriers*. Pollock (1989), on the basis of work by Emonds (1978) on the position of adverbs, argued that I(infl) should be divided into two different functional heads T(ense) and Agr(eement) —a proposal known as the *Split-Infl Hypothesis*. Conceptually, this hypothesis solved the problem of having two different sets of features (tense and agreement) under the same head. Empirically, the Split-Infl hypothesis was useful to capture crosslinguistic differences (e.g. between English and French) concerning the relative position of verbs, adverbs and negation. Since the late 80s and the early 90s, an increasingly important role has been attributed to Agr and AgrP. Two AgrPs have been assumed as part of clausal structure: a higher AgrP, concerned with subject agreement (AgrsP), and a lower AgrP, concerned with object agreement (AgroP) (see Chomsky 1991, 1993).[10] Agr heads have further been split into Number (Shlonsky 1989, Ritter 1991) and Person (Shlonsky 1989). An Asp(ect) projection (Travis 1991, Hendrick 1991), as well as a Neg(ation) Phrase (Laka 1990, Zanuttini 1991) have also been identified. These projections have been readily assumed in recent work, though with disagreements regarding the hierarchical order between them.[11, 12]

The idea that at least some inflectional morphology is dealt with in the syntax by having inflectional affixes as heads projecting their own phrases can, in principle, be understood within the framework of weak lexicalist hypotheses for the syntax-morphology relation. Baker's (1985, 1988) work on complex predicate formation has to be mentioned among those having the biggest impact on our understanding of the interrelation between certain syntactic phenomena and morphological operations. Baker studies a wide range of incorporation processes crosslinguistically, where one semantically independent word ends up being 'inside' another (passives, applicatives, causatives, noun incorporation and possessor raising, among others). These processes are analysed by Baker as the result of applying standard (syntactic) movement operations to words (heads), rather than phrases: as such, they must obey principles governing movement in the syntax like the *Empty Category Principle* and Travis' (1984) *Head Movement Constraint,* which impose some limitations on the type of complex predicates found in the languages of the world. In his framework, the ordering of

(10) An Agr head involved in agreement with the indirect object has also been proposed (see Mahajan 1990, Mendikoetxea 1992, Cheng & Demirdache 1993, and Franco 1993, among others).

(11) For discussion regarding the hierarchical order between TP and AgrsP, as well as between TP, AgrsP and NegP, see, among others, Demirdache (1989), Belletti (1990), Laka (1990), Chomsky (1991), Zanuttini (1991), Ouhalla (1993) and Shlonsky (1995).

(12) There is still an ongoing debate with respect to the number and properties of functional categories and with regard to the role they play in syntactic operation. The proliferation of functional categories is indeed a very recent phenomenon and raises a number of questions regarding, among other things, the necessary conditions to postulate functional heads and their universal or language-specific nature, as well as more general theoretical questions to do with explanatory adequacy, which are brought about by the considerable enrichment of descriptive devices. Among the criticisms raised regarding the postulation of the same functional projections for all languages is that the morphophonological component must necessarily include a large number of unprincipled and unrestricted spell-out stipulations. These questions have been argued to become more acute in systems with rich covert structure, such as Chomsky's Minimalist Program; if covert operations are allowed, the relationship between syntax and morpho-phonology becomes more complex. See Webelhuth (1995: 5.3.3), among others, for discussion on this matter.

morphemes within a single word is constrained (as well as by selectional restrictions and subcategorization) by the *Mirror Principle,* according to which morphological derivation must directly reflect syntactic derivations, and viceversa. The syntactic approach pursued by Baker has partially solved some well-known problems in morphological studies. In particular, it provides an answer to questions such as what constrains morphological variation, what the differences are between possible and impossible words, as well as what determines the order of morphemes within complex words. The tremendous impact of Baker's work on issues to do with the morphology-syntax connection is evident in many of the papers included in this volume (see section 2).

Current studies of predicates and argument structure in relation to the morphology-syntax interface in the 90s have been also greatly influenced by Larson's (1988) analysis of double object constructions and Hale & Keyser's work on argument structure and lexical syntax. Larson (1988) argues that constructions with ditransitive verbs like *put,* as well as double object or dative verbs like *give,* involve VP-shells with a phonologically silent (causative) V as the head of the higher VP, to which verbs like *give,* and *put* adjoin through raising.[13] This analysis has recently been extended to transitive verbs like *break,* which can be taken to be syntactically derived complex verb forms, rather than monomorphemic lexical items. The analysis of verbs like *break* involving a causative predicate as part of their predicate composition has been undertaken within the context of work exploring the relation between the Lexicon and syntactic structure. Among the linguists that have dealt with these issues, we have to mention especially the work that Hale & Keyser have been carrying out since the mid 80s, the impact of which is evident in the contributions to this volume. Their work is devoted to deriving theta theory and argument structure from syntactic structure, under the assumption that argument structure is itself a syntax. They have developed a theory of complex word formation at the level of what they refer to as 'lexical syntax' (lexical relational structure, LRS) which makes extensive use of incorporation processes, and have shown that the range in variation in argument structure follows from the application of well-known syntactic principles and constraints to these lexical operations. Their theory has contributed to radically changing the current view on theta-theory and argument structure. Under their approach, theta-roles are not primitives of the theory: what had been previously defined as theta-roles are now reduced to relations determined by the lexical categories and their projections. The paucity of theta-roles follows from the interaction of the small number of lexical categories and from the limits on the type of structural relations into which these categories can enter with their projections, as well as from a principle of Unambiguous Projection which restricts the possible ways in which these lexical categories can project syntactically. The view that theta-roles are not primitives but derivative has become increasingly popular during the 90s, and will be found in many of the papers that follow.[14] Although an analysis of argument structure

(13) For recent related discussion see, among others, Neeleman (1994) and Den Dikken (1995).

(14) The works by Baker, Larson and Hale & Keyser, among others, have also paved the way for the incorporation into syntactic representation of the basics of theories of event-structure like that of Pustejovsky (1987, 1991), as can be observed in some of the papers that follow. For recent approaches that try to derive argument structure and theta-theory from event-structure from a syntactic point of view see, among others, Borer (1994) and van Hout (to appear).

along the lines pursued by Hale & Keyser has become increasingly popular, the similarities between the syntactic processes and principles that they propose operate at the level of lexical syntax and the processes and principles commonly assumed at the level of phrase syntax blurs, to a large extent, the distinction between lexical and syntactic operations, and have led many researchers to question the existence of such a difference.

1.3. The morphology-syntax connection in the 90s

We now briefly turn to some recent proposals that have influenced the way in which we view the relation between syntax and morphology, both from the perspective of a syntactic theory (Kayne 1994, Chomsky 1995) and from the perspective of a morphological theory (Halle & Marantz 1993).

The development of recent syntactic theories has partly provided an explanation for some well-known descriptive generalizations that operate in morphology. In particular, the new theory of word order and phrase structure developed by Kayne in *The Antisymmetry of Syntax*, straightforwardly derives William's Righthand Head rule (see section 1.2). The main claim of this work is that phrase structure always completely determines linear order and that phrases which have different linear order must also have different hierarchical structure. In particular, he argues that asymmetric c-command invariably maps into linear precedence (the *Linear Correspondence Axiom*, LCA). Following Kayne's LCA, in an adjunction structure the adjoining element must invariably precede the element to which it adjoins. It follows under this analysis that in a complex word, the head of the word must be preceded by the other components. This subsumes Williams's Righthand Head Rule.[15]

Regarding the morphology-syntax interface, a crucial hypothesis of Chomsky's (1995) Minimalist Program (MP) is that syntactic operations are triggered by morphological features. These are part of the feature specification of lexical items and enter into checking operations in the syntax (either in the overt syntax or at LF). The grammar contains a computational system and a lexicon. Under minimalist assumptions, the computational system consists of only two interface levels of representation, PF and LF, which interact with other subsystems of the mind/brain. The inventory of functional categories as the locus of formal features is drastically reduced in Chomsky (1995) in an attempt to limit the enormous descriptive power of the late Principles and Parameters model and in search of explanatory adequacy (now formulated in terms of the question "How perfect is language?"). Thus, Agr heads are eliminated under the assumption that they contain features which are neither phonologically nor semantically interpreted (e.g. [-Interpretable] features). Lexical items like nouns and verbs are fully inflected in the lexicon for Case, tense, etc. and must

(15) For relevant discussion on the LCA see Chomsky (1995), Nunes (1996) and Uriagereka (1997). Chomsky (1995) introduces the LCA into the theory but departs from Kayne's original proposal in several ways. In particular, while Kayne takes the LCA to be a general condition on the projection of syntactic structures governing LF as well as PF, for Chomsky the LCA is a principle of the phonological component which applies to the output of the morphological component.

check their features against the matching features of a (functional) head. An operation Spell-Out can apply anywhere in the derivation of a linguistic expression (Σ); the computation then splits into two parts so that Σ can be mapped into two interface representations, a PF representation and an LF representation, satisfying its output conditions at these two interfaces. The features of functional heads must be eliminated for convergence prior to PF or LF; i.e. they are in the structure simply for checking purposes. While computation to LF is uniform and movement is mainly driven by checking operations involving morphological features (checking of Case, checking of the D feature of T, checking of phi-features, and so on), Chomsky assumes that computation to PF is not uniform. Little attention is paid to the properties of computation to PF. However, Chomsky postulates the existence of an independent morphological module on the way from Spell-Out to PF, which constructs word-like elements which are subsequently subject to phonological processes.[16]

This view contrasts with the approach adopted by Halle & Marantz (1993) within the framework of *Distributed Morphology* (DM), for whom computation from Spell-Out to PF is uniform.[17] DM adopts the basic organization of the grammar in Principles and Parameters, with the addition of an independent component of Morphological Structure (MS), which is the interface between syntax and phonology. In this regard, MS is similar to Chomsky's morphological component in the Minimalist Program which is also located between Spell-Out and PF; but as a theory of morphology, DM attributes a crucial role to this component. Despite the fact that MS is a level of grammatical representation with its own principles, the operations manipulating terminal elements at this level are well-motivated operations found in other levels of the grammar (between DS and SS). In fact, one of the central claims of DM is that morphology is not concentrated on a single component of the grammar, but is distributed among several distinct components.

There are several other ways in which Halle & Marantz's view of the morphology-syntax interface within the framework of DM differs from Chomsky's view in the MP. These differences can be illustrated in relation to the way they approach inflectional morphology. One of the central claims of DM is that terminal nodes mediate the connection between syntactic/semantic information and phonological information in a uniform way. This goes against Chomsky's idea that the features of functional categories are in the structure simply for checking purposes; for instance, the features of categories like Tense must be checked off in the course of computation since those features are realized on the verb which enters the computational system as an inflected form. In DM the syntax operates with bundles of features and lexical items are inserted through Vocabulary insertion at the level of MS: all terminal nodes —lexical and functional, those present at DS and SS, and those added at MS— are subject to Vocabulary insertion at the level of MS. A

(16) See Bonet (1991) for arguments in favour of a morphological component or the way to PF, based on different assumptions from those of Chomsky (1995).

(17) According to Halle & Marantz (1993), Distributed Morphology stands between 'affixless' or a-morphous approaches to morphology (Beard 1991, Anderson 1992 and Aronoff 1994) and approaches like that of Lieber (1992), by which affixes, like other lexical stems, are morpheme pieces; it shares with the former the separation of the terminal elements in the syntax from their phonological realization, and with the latter that lexical (Vocabulary) entries relate bundles of morphosyntactic features to bundles of phonological features.

related difference between the two models concerns word-formation processes. In DM these processes take place in the syntax and at MS, by means of syntactic and morphological operations (merger, fusion, fission, etc.) combining heads: i.e. there can be no inflected verbs or nouns in the Lexicon, contrary to what Chomsky claims. Thus, the MP and DM treat inflectional morphology in very different ways.[18]

1.4. Parametric variation and the morphology-syntax interface

Some of the most interesting questions regarding the interaction between syntactic and morphological operations have to do with crosslinguistic variation: Are there morphological parameters? What are the limits of parametric variation? What do morphological parameters derive from? Can we make syntactic properties of languages follow from morphological parameters?

A particularly appealing proposal in Chomsky's MP is that parametric variation belongs in the Lexicon and, in particular, it is based on the nature of morphological features associated with lexical items rather than on the computational system, which is assumed to be the same in all languages (see also Borer 1984 for related discussion). The proposal that parameters are morphological in nature underlies the discussion that follows, with which we finish this brief overview. We will simply mention two parameters which have received a lot of attention in the literature and which are of direct relevance for some of the topics addressed in the papers in this volume: the ergativity parameter and the polysynthesis parameter.

Questions related to Case are at the center of the ergativity parameter. A well-known difference between ergative and (nominative-)accusative languages concerns the Case assignment of subjects and objects. In accusative languages the subject is always assigned nominative Case, regardless of the type of predicate (i.e. whether the verb is transitive, unergative or unaccusative). Objects, in contrast, are assigned accusative Case, so that subjects and objects differ in the Case they are assigned. In ergative languages, however, the type of predicate influences the choice of Case for the subject; while some subjects display ergative Case, other subjects display absolutive Case —the Case associated with objects of transitive verbs—, so that some subjects pattern along with objects regarding Case.[19] In sum, the ergativity parameter deals with the way arguments are grouped together regarding Case. These differences in the Case system usually go together with differences in the agreement systems exhibited by the two language types.

Early approaches to this phenomenon linked differences in Case patterns to differences concerning the syntactic positions into which arguments of transitive clauses are mapped at the level of D-Structure in the two groups of languages (de Rijk 1966, Marantz 1984). Marantz, in particular, argues that in accusative languages

(18) See Halle & Marantz (1993: 6) and Marantz (1995) for more discussion on the differences between DM and Chomsky's MP.

(19) In some ergative languages like Dyirbal and Inuit the distinction is between subjects of transitive verbs (ergative) vs. subjects of intransitive verbs —unergative and unaccusative— (absolutive); in other ergative languages, like Basque, the distinction is between subjects of transitive and unergative (ergative) vs. subjects of unaccusative verbs (absolutive).

the object is assigned its theta-role by the V and the subject is assigned its theta-role by the whole predicate (VP), while in ergative languages the reverse situation is found, so the association between semantic roles and initial grammatical relations is different in the two types of languages. He assumes the process of Case assignment to be identical in the two types of languages, and argues that it is the opposite D-Structure (or Predicate-Argument) representation of the arguments as subject or object that results in differences regarding what Case is assigned to those arguments.

It is now commonly accepted that all arguments are uniformly mapped into certain syntactic positions within the maximal projection of the verb (including the subject, after the *VP-Internal Subject Hypothesis* of Zagona 1982, Kuroda 1988, and Koopman & Sportiche 1991, among others).[20] According to this assumption, ergative and accusative languages share essentially the same structure at the base. Differences between the two types of languages are now derived by taking advantages of recent proposals regarding clausal architecture and the mechanisms for Case assignment —as part of a general process of feature checking. Under the hypothesis that argumental NPs move out of the VP to check their agreement and Case features in a spec-head relation with a relevant head, the contrast exhibited by accusative and ergative languages follow from differences in the kinds of movements which nominal arguments undergo in order to have their Case-features checked.[21] Within this approach, the reason why in ergative languages intransitive subjects (S) and objects (O) are assigned the same Case is because they move to check their Case to the same (specifier) position; the same line of argumentation explains why transitive subjects (A) and S have the same Case in accusative languages. Interpreted in this way, a theory of ergativity should provide an answer to the question of what it is that triggers movement of the arguments to one specifier position in one group of languages and to a different specifier position in the other group.

There is, however, some disagreement as to what exactly these positions are and what their hierarchy is in the structure. Two major approaches can be distinguished within this general framework of assumptions. Proponents of the first approach maintain that in ergative languages A moves higher than O (see, among others, Bobaljik 1992, Chomsky 1993 and Albizu, this volume). Under this view ergative and accusative languages have basically the same transitive paradigms, though they differ in the derivation of intransitive clauses. In contrast, following the second approach, ergative and accusative languages have essentially the same intransitive paradigms but differ in the derivation of transitive clauses. Although with variations in detail concerning syntactic structures and NP-movement, the partisans of the second approach share the view that in ergative languages O moves higher than A at some point in the derivation, while in accusative languages, the pattern of movement is reversed (see, among others, Murasugi 1992 and this volume, Bittner 1994, and Bittner and Hale 1996). This hypothesis captures the intuition of early

(20) But see Diesing (1992) for whom subjects of individual-level predicates are generated directly in [SPEC, IP], unlike subjects of stage-level predicates, which are VP-internal.

(21) Since the late 80s it is a fairly standard assumption within the Principles and Parameters framework that structural Case is checked in a spec-head relation with a relevant (functional) outside the VP. Additionally, in Chomsky's (1995) MP structural Case can be checked through adjunction of a Case-feature to the relevant head (either T or V).

analysis of ergative languages, which locates O in a higher position in the structure than A, while maintaining a uniform thematic and syntactic structure below the VP.

The second major area of crosslinguistic variation in morphosyntax to be mentioned in this introduction concerns what is known as the polysynthesis parameter. Polysynthetic languages differ from non-polysynthetic languages in that they display several of the typical properties of non-configurational languages (freedom of word order, dropping of NP arguments and existence of discontinuous expressions), as well as a wide range of incorporation phenomena. In her pioneering work on nonconfigurationality, Jelinek established a connection between some of the characteristic properties of these languages and the rich verbal and nominal inflection that they exhibit (Jelinek 1984, 1988, 1989). In particular, she argued that these properties follow from the fact that in polysynthetic languages thematic roles are assigned to agreement markers instead of to syntactic argument positions (the *Pronominal Argument Hypothesis).* Baker (1996) establishes a link between the Pronominal Argument Hypothesis and the conclusions of his previous work on incorporation (Baker 1988) and argues that what distinguishes polysynthetic languages from other types of languages and determines the shape and properties of the former is not the cumulative result of a series of differences but rather follows from a single property. In particular, he argues that both the Pronominal Argument Hypothesis (by assuming that inflectional morphemes are verbal arguments) and his theory of incorporation (by assuming that in complex forms derived by incorporation one of the elements is the syntactic complement of the other) share the view that there are "syntactic argument relations that are expressed morphologically". This is what seems to be the definitory characteristic of polysynthetic languages. On the basis of this, Baker puts forth the hypothesis that the polysynthesis parameter is a macroparameter, and defines it as a morphological visibility condition: "A phrase X is visible for theta-role assignment from a head Y only if it is coindexed with a morpheme in the word Y via (i) an agreement relation, or (ii) a movement relationship" (*op. cit.*: 17). What distinguishes non-polysynthetic languages from polysynthetic ones and is characteristic of the latter, under Baker's approach, is that agreement morphemes and incorporated noun roots form part of the same system to render an argument visible. While Baker's theory is certainly attractive, whether Baker's macroparameter can alone derive all the properties exhibited by polysynthetic languages has been questioned by some researchers, who argue that his theory fails to account for the syntactic properties of some languages which meet the morphological criteria of polysynthetic languages (see, among others, Matthewson, this volume, and references there). Under this alternative view, the distinctive properties of polysynthetic languages follow from the specification of not one but several different parameters.

2. The papers in this volume

The thirteen papers in this volume can be roughly divided into three major groups according to the topics they explore in relation to the morphology-syntax interface: (I) the properties of inflectional morphology and its place in the grammar,

(II) the relation between argument structure, lexical semantics and the morphology-syntax interface, and (III) parametric variation.

I. As the previous section has emphasized, one of the most controversial issues in the history of morphology in generative linguistics is the place of inflectional morphology in the grammar. Three papers in this volume focus on this area of research on the basis of the study of a variety of phenomena regarding inflectional morphology and the realization of inflectional features. In particular, ALBIZU's and PHILLIPS's papers bear directly on questions such as whether inflectional morphology should be defined as a lexical or as a syntactic process. ELORDIETA's paper, in turn, explores the properties of inflectional heads in the morphophonological component.

In "Generalized Person-Case Constraint: A Case for a Syntax-Driven Inflectional Morphology", ALBIZU explores the nature of the relationship between syntax and inflectional morphology. He argues for a syntactic approach to inflectional morphology based on the study of the *Person-Case Constraint* (PCC). The PCC —"if DAT, then ACC(ABS)-3rd" (Bonet 1991, 1994)— is a morphological condition against particular combinations of Dative and Accusative (or Absolutive) agreement markers, attested in a heterogeneous group of languages. Albizu argues for a new approach to this restriction and proposes what he calls the *Generalized Person-Case Constraint* (GPCC), which subsumes the more particular PCC. The analysis he proposes in this paper introduces two fundamental conditions in the definition of the GPCC: these are 'c-command' and 'locality' —defined in terms of 'inclusion in a same minimal domain'—, the latter being subject to parametric variation. The claim that inflectional morphology is derived in the syntax follows, under Albizu's analysis, from three crucial properties of the morphological component that are well established in the characterization of the GPCC: (i) the strong parallelism between syntactic and morphological structure; (ii) its sensitivity to structural conditions such as 'c-command' and 'locality', which are generally believed to belong in the syntax; and, more importantly, (iii) the sensitivity of this morphological process to the syntactic operation of move-alpha. In particular, this last property casts doubts on the correctness of lexicalist approaches to the phenomenon under study, and more generally, on lexicalist approaches to inflectional morphology. Although the discussion in the paper concentrates on Basque and Romance data (Catalan and Spanish), the paper also contains an interesting discussion of this phenomenon in other unrelated languages. A particularly appealing feature of Albizu's analysis is that the final system is designed to have wide crosslinguistic explanatory power and to cover constraints on the combination of person-agreement markers other than the PCC.

The proposal that complex morphological heads are syntactically built is also found in PHILLIPS' paper "Disagreement between Adults and Children", which addresses the issue of learnability in relation to the syntax-morphology connection. Phillips looks at the loss of agreeement morphology in constructions involving wh-movement in adult languages (wh-disagreement effects) and their relation to root infinitives in early child language —two phenomena which had not been related previously in the literature. Wh-disagreement effects present a wide range of crosslinguistic variation, both regarding the syntactic contexts where loss of agreement takes place, as well as the specific morphological reflex of the phenomena. Phillips addresses two major

questions surrounding the 'disagreement effects'. First, in adult languages showing an alternation between declarative sentences with subject-verb agreement and interrogative sentences lacking subject-verb agreement, (a) what is it that accounts for the wide range of cross-linguistic variation in this alternation? and (b) how are adult languages showing disagreement effects learned by children? Second, whereas adult wh-disagreement languages show loss of agreement in wh-extraction, child language involves loss of agreement in declaratives, agreement being obligatory in wh-question. What does this apparently reverse distribution follow from? Phillips offers an analysis that derives the whole set of disagreement effects in adult and child language in a uniform way. Under the assumption that morphologically complex heads are built syntactically (movement being triggered by morphological factors), he argues that the two processes of disagreement effects are the result of shorter than normal verb movement in the syntax —a verb failing to reach an agreement head to which it would otherwise attach. Concerning the syntactic contexts for wh-disagreement effects, Phillips assumes that movement only takes place when required and derives the contrast in agreement between declaratives and wh-questions in adult language from the different requirements imposed on the licensing of *pro* and wh-trace: the first one needs to be identified by overt agreement while the second one does not. The morphological side of the phenomenon is now straightforwardly derived: the morphological spell-out of the features of the verb reflects the syntactic position this head has reached in the structure. Since wh-disagreement effects are related to verb movement which is triggered by morphological features, children are thus able to learn where wh-disagreement does or does not apply in their language with little exposure to the data. This account immediately explains why wh-disagreement effects are restricted to pro-drop languages.

As for the phenomenon of root infinitives in child language, Phillips proposes the same analysis: children do the same as those adults which have wh-disagreement, but this process takes place in languages with different properties regarding verb movement. Children know that in wh-questions the verb has to raise to C; as a side effect of this movement, the verb will pick up agreement-features on its way to C. The lack of agreement effects in child language follows because in declaratives young children may fail to move V to I, unless other requirement overrides this; as a result, no inflectional heads are picked up and the default infinitival verb form is spelled out. An advantage of this approach is that it can explain why in languages where verb movement is necessary to license nominative Case, overt subjects almost never cooccur with root infinitives. While the two type of disagreement effects have separately drawn a great deal of attention in the literature, it is here that they are related to each other and accounted for uniformly for the first time. Phillips' paper thus offers a novel account of a set of puzzling problems both in the area of parametric syntax and language acquisition. A particularly interesting aspect of this paper, as pointed out by the author himself, is that data from child language is used to offer a new way of approaching facts in adult language, not only regarding wh-disagreement facts —the main focus of his paper— but also other constructions that show related (dis)agreement phenomena (complementizer agreement, object agreement, and agreement in structures involving extraction under successive cyclicity).

ELORDIETA's paper "Feature Licensing, Morphological Words, and Phonological Domains in Basque" explores the relationship between the syntactic and morpho-phonological components of the grammar, based on the generalizations observable from a phonological phenomenon in Leketio Basque (LB): Vowel Assimilation (VA). By this process, the initial word of determiners and inflected auxiliary verbs assimilate their initial vowels to the last vowel of the syntactic element that precedes them, a noun or adjective and a participial verb respectively. Other types of heads occurring after a participial verb, such as causative verbs, modal particles, subordinating conjunctions, or lexical heads do not have their initial vowels affected by VA. Elordieta sets to explain why functional heads realizing morphosyntactic features in this language participate in VA, in contrast with other types of heads which do not realize such features. He argues that the theories of lexical and postlexical phonology developed so far cannot capture the domain of application of VA satisfactorily. His analysis is that in the morphophonological component there is a well-formedness filter which requires every phonetically realized linguistic element to be a part of a well-formed morphological constituent, which he calls a m(orphological)-word. Heads realizing morphosyntactic features are morphologically deficient, and thus need to compensate their deficiency by associating with other heads which are morphologically strong. That is, they need to be morphologically licensed. This is achieved, Elordieta argues, either by the syntactic incorporation of the morphologically strong head, or by merger in the morphological component. Agreement and tense features require the first mechanism in LB, and the determiner gets licensed by an operation of suffixation in the morphophonological component. The proposal is that the m(orphological)-units so formed may be mapped or interpreted as phonological domains in the phonological component proper. VA in LB is specified to apply within a m-word. Thus, the differences in phonological behavior displayed by syntactic heads in LB are explained by their different morphosyntactic properties. This novel approach presented by Elordieta provides the theoretical framework for a more complete understanding for the mapping between the syntactic and morphophonological components, specially in what regards the relationships among heads.

II. A recurrent topic in this volume is the relation between argument structure, lexical semantics and the morphology-syntax interface, with particular attention to complex predicate formation. This is a question addressed at different levels, and sometimes from competing positions, in the papers by BELVIN, DAVIS, DEMIRDACHE, DEMONTE & VARELA, HALE & KEYSER, KURAL, MINKOFF, and RIGAU.

Since the mid 80s HALE & KEYSER have been looking into the relation between lexical items and the syntactic structures in which they are found, under the commonly held assumption that syntax is projected from the lexicon. Their central hypothesis, as stated in section 1.2. of this Introduction, is that the proper representation of argument structure is itself a syntax at the level of lexical representation (lexical relational structure: LRS), from which thematic roles are derived (see Hale & Keyser 1993 and the references cited there). It is within this context that their contribution to this collection is developed.

The main concern of Hale & Keyser's paper in this volume, "The Limits of Argument Structure", is to define the principles that account for both the range of

variation and the limits of argument structure. Among the questions the paper addresses are why unergatives have no causative alternant, and why unaccusatives can have causative alternation. In answering these questions, they develop the hypothesis that patterns in argument structure can be derived crosslinguistically from two variables: (i) a set of universal features inherent to lexical categories, and (ii) principles of projection according to which syntactic structure is projected from lexical items (i.e. principles that constrain the way in which categories project). Regarding the former, their proposal is that categories like N, V, A and P (understood as universal categories independently from how these categories are morpholexically realized in the different languages) are universally defined in terms of features indicating the syntactic relations [+/-subject] and [+/-complement]. Within this context, they define V as [-s, +c], A as [+s, -c], P as [+s, +c] and N as [-s, -c]. As for the projection principles, there is a principle of Full Interpretation that requires any maximal projection properly dominated by a root lexical to be a subject or a complement, and an asymmetry principle by which sister relations can only be binary. Their hypothesis is tested in two languages which display different morphological behavior and which show overt differences in the way they form derived verbs: English and 'O'odham-Pima and Papago of southern Arizona and northern Sonora. Languages like English, in which the morphological processes by which Vs are formed (out of Ns and As, for instance) are largely non-overt make extensive use of the process of incorporation of Ns and As into empty V heads. This process is entirely driven by phonology and, in particular, by the requirement that empty heads be supplied with a phonological matrix to be interpreted at the level of PF.[22] In contrast, in 'O'odham, the majority of derived verbs involve overt derivational morphology. The authors show that, despite these differences, derived verbs in this language conform to the very same principles which appear to limit derived lexical structure in English, thus supporting the universal nature of principles limiting argument structure. The central assumptions of Hale & Keyser's theory have been highly influential and they are implicitly or explicitly present in several articles reviewed in this section, to which we now turn.

MINKOFF's proposals in his paper "Argument Structure and Animacy Entailment" are crucially based on Hale & Keyser's (and Jackendoff's) idea that broad thematic roles reduce to properties of syntactic configuration, but he argues in favor of enriching Hale & Keyser's lexical relational structures (LRS) so that they provide information not only about thematic structure but also about animacy (in relation to derived verbs). The goal of Minkoff's contribution in this volume is to account for certain restrictions on the distribution of (so-called) thematic roles entailing animacy —Agent, Volunteer, Beneficiary and Sensor. These animacy entailing roles are subcases of the broader roles Cause, Theme, Goal, and Patient, respectively and, according to this author, they are produced by the application of an optional lexical semantic interpretation to base-generated structures, adding "lexico-interpretational

(22) The idea that derivation to PF is guided by the principle of Full Interpretation is in line with current ideas in linguistic theory and, in particular with Chomsky's Minimalist Program, by which syntactic processes are derived from interface conditions (see section 1.3. in this introduction, as well as Elordieta, this volume, for well-formedness conditions at the level of PF).

animacy-entailment" (LIAE) to otherwise more general thematic roles. Animacy-entailing roles are optionally available in certain theta-positions, and are constrained by configurational principles, but the lexical idiosyncrasies of particular verbs can force the application of the LIAE. Particularly interesting for the relation between lexical semantics and syntax and morphology is the application of the LIAE to the LRS of deajectival and denominal verbs. Minkoff follows proposals by Hale & Keyser and assumes that these verbs are derived by incorporation processes from underlying LRS. Restrictions on the generation of animacy-entailing roles on the arguments of derived verbs apply at the level of LRS. Thus, the generalization is that the LIAE applies to base-generated syntax: the D-structure of non-derived verbs, and the LRS of derived verbs. It is further suggested that the morphology of derived verbs must 'remember' the LIAE after the LRS no longer exists. It follows that whether a verb is derived or non-derived, the same constraints apply (transitive verbs can select LIAE on subject or object, but not on both, unaccusative verbs do not select LIAE, and so on). Minkoff's conclusion is that the relation between syntax and morphology at the level of lexical semantics is richer than has been argued previously: it includes LIAE. An interesting hypothesis which emerges from the proposals discussed in this paper is that there may be a certain binary order to much of the thematic relation realm, because it appears to hold that for each of the thematic relations established by syntactic structure, there exists an animacy-entailing subcase which is created by the LIAE.

The proper characterization of thematic roles and argument structure underlies to a wider or a lesser extent the classification of verb types and the typology of complex verbal predicates, areas which are extensively discussed in the papers in this volume. The papers by Belvin, Davis, Demirdache and Kural focus on a variety of morphosyntactic operations on verbs and analyze various aspects of the morphology of predicates and its relation to argument structure and event (de)composition. Causation and causative formation —one of the most controversial areas in the morphology-syntax interface— is a topic addressed in detail from different angles by Belvin, Demirdache and Kural.

Both BELVIN's "The Causation Hierarchy, Semantic Control and Eventivity in Nishga" and KURAL's "Verb Incorporation and Causation Types" discuss processes to do with causative complex predicate formation in terms of (overt and non-overt) morphological operations. The study of causation must determine the argument structure associated with the predicates involved. This is an area in which aspects of verb syntax and morphology are closely related to argument structure and viceversa. Belvin's and Kural's proposals are radically different in their treatment of semantic roles in causative constructions, though they both assume the relatively standard view that CAUSE is a two-place predicate whose arguments correspond to a causer (agent) and to a caused event (against an analysis in which CAUSE is a three-place predicate with an agent, a patient and a caused event, as in Alsina 1992).

Causative structures can be ambiguous between interactive (or direct) causation readings and circumstantial (or indirect) causation readings. KURAL's paper argues that the morphological status of the causative predicate CAUSE (as part of the V-CAUSE complex predicate) is responsible for the two readings associated with causatives, depending on whether the event is caused by the causer acting on the causee

(interactive) or by the causer manipulating the circumstances (circumstantial). The two readings are also sensitive to the type of verb heading the embedded predicate. With unaccusatives, the availability of the interactive reading depends on whether the lower V is incorporated into the higher CAUSE predicate overtly (morphological causatives, that is when CAUSE is a bound morpheme), in which case the interactive reading is not possible, or covertly (periphrastic causatives), in which case the interactive reading is possible. As for the circumstantial reading, it is not available for null causatives (i.e. the causative use of English verbs of motion, like *run*, *march*, *walk* and *jump*). The unavailability of the interactive reading with unaccusative verbs when incorporation into CAUSE takes place overtly is related to the fact that the only argument of an unaccusative is too low to become the patient of CAUSE (it is not in [SPEC, VP] of the lower predicate, but rather it is in the position of complement of the V). When this is the case, the whole lower VP becomes the patient of CAUSE, which accounts for the circumstantial reading of the structure. The reason why this latter reading is unavailable with null causatives is related to a particular bracketing of the V-CAUSE complex, which places restrictions of what element can be the patient. Regarding the relation between causation and argument structure, Kural (following Jackendoff 1990 in distinguishing categorial selection and thematic licensing) offers a reinterpretation of Alsina's (1992) proposal that the patient role may be associated with different elements, and he is thus able to account for the two readings associated with causatives. In the interactive reading CAUSE assigns the role patient to the subject of the embedded predicate (in [SPEC, VP] of that predicate), and thus the causee receives a composite role: patient from CAUSE and agent from the embedded predicate. In the circumstantial reading, the patient role of CAUSE is assigned to the whole embedded VP, so that the causee receives only the semantic role assigned by the embedded predicate. To reach these conclusions, Kural draws on data from languages showing a variety of morphological processes in causatives (mainly English and Turkish, but also Hungarian, Greek, Japanese and Korean). Together with aspects of verb morphology, Kural's paper raises interesting issues in relation with verb typology which also bear directly on the syntax-morphology interface. In particular, facts to do with causation seem to suggest that the classic dichotomy unaccusatives-unergatives is not fine-grained enough in that there seem to be elements that share properties of both (see Davis's, Demirdache's, Hale & Keysers's and Rigau's papers in this volume for relevant discussion).

BELVIN's analysis is based on the study of causative constructions in the Tsimshian language Nisgha. There are in this language three morphological distinct causative predicates (bound morphemes) selecting three different types of base predicates: states, events and actions. Depending on the semantics of the base predicate, the causee is interpreted (i) as a volitional agent, with actions; or (ii) as non-volitional agent: with events (which are associated only with an actor role) and with states (which do not assign an agent theta-role to their agents). These causative morphemes can be stacked on to the same base predicate creating complex verbal forms of two and even three causative morphemes. According to Belvin, the interpretation of these complex forms, as well as restrictions on co-occurrence, are determined primarily by semantic factors to do with the eventuality described by the embedded predicate. In relation to the argument structure of causative predicates, Belvin's

analysis departs even more sharply than Kural's from Alsina's (1992) analysis, which, in his view, gives the wrong empirical results regarding the contexts in which the structure is interpreted as involving direct or indirect causation. He argues that the interpretation of the causee as volitional or non-volitional in the two readings (direct and indirect) is simply a factor of the semantics of the embedded predicate and not the result of complex predicate formation, even in a language like Nisgha where CAUSE is a bound morpheme. In Nisgha, where there is a specialization of causative morphemes, the direct causation morpheme *'in* attaches to events [+eventive, -control], associated with an actor which is interpreted as non-volitional causee in these structures. However, the indirect causation morpheme *gwin-* attaches to actions [+eventive, +control], associated with an agent which is interpreted as a volitional causee, again as a factor of the semantics of the embedded predicate (on the distinctions between agents and actors, see, among others, Dowty 1991, Jackendoff 1991, Demirdache, this volume, and Minkoff, this volume). Belvin's analysis is thus an interesting alternative to the general view that causatives are created through a process of complex word formation, even though he draws on data from a language like Nisgha that looks like a perfect candidate for that analysis. The conclusions reached by Belvin are of particular relevance for the current debate on theta-theory and theta-roles. In accordance with several other authors in this volume, his analysis supports the view that the content of theta-roles has no independent status; what determines their content, in his view, is the type of eventuality associated with a particular predicate.

The issue of agent control and, in particular, the difference between agents and actors in relation to causation is also addressed, from a different theoretical position, by DEMIRDACHE in "*Out of Control* in Salish and Event (De)Composition", which examines the puzzling properties and restrictions exhibited by *out of control* morphology in St'át'imcets (a language member of the Northern Interior branch of the Salish family). In this language, the morphology on the predicate can mark the degree of control of the agent over the action denoted by the verb. There are three different degrees of control: control vs. neutral control vs. out of control. The out of control marker *ka...a*, which emphasizes the absence of control over some state or event, can affix to different types of predicates imposing restrictions on their interpretation. When attached to an unergative or a transitive verb, out of control morphology suppresses the control of the agent over the action denoted by the verb. Two readings are available, but the distribution of these two readings is determined by lexical and grammatical aspect. When out of control affixes to a verb that denotes an activity, it yields an 'able to' reading. In contrast, when the verb has a causative meaning, it yields an 'accidental' reading; this reading disappears under the scope of certain operators (such as the progressive or negation). What is particularly interesting is that out of control is also possible with unaccusatives —that is, with predicates which denote actions which are never under the control of an agent, since they lack an external argument altogether. When out of control applies to unaccusative predicates it yields a suddenly/accidental reading; this reading disappears when under the scope of the progressive or negation, in which case only the ability/capacity reading is possible.

Demirdache argues against reducing agent control to volition or intentionality and against an analysis (of out of control) based on thematic roles: the different degrees of control cannot be derived from the assignment of different roles to the subjects. Instead, she proposes an alternative analysis of the properties of out of control morphology which is based on two hypotheses. The first hypothesis is that unaccusatives and causatives share the same underlying semantic representation: unaccusatives have underlyingly causative semantics. Under the assumption that certain morphosyntactic processes operate on event structure, the second hypothesis she puts forth is that out of control affects the lexical semantic representation of a predicate without altering the number of arguments it has. It is the equivalent of a passive defined on the lexical semantic representation of a predicate. However, while passive suppresses an external argument position, affixation of out of control shifts the event-type associated with its predicate into a lower event-type: it suppresses either the initial subevent in the event structure of a predicate, or the name associated with this subevent. This hypothesis allows her to explain why out of control yields precisely either an ability, an accidental or a suddenly/spontaneous reading. The hypothesis that causatives and unaccusatives share the same underlying semantic structure allows Demirdache to elegantly derive the intriguing properties of the phenomenon: in particular (i) why out of control can apply to unaccusatives; (ii) why out of control morphology yields an accidental reading with causatives and unacussatives, but an ability reading with unergatives; and, (iii) why out of control yields a suddenly/spontaneous reading with unaccusatives. The conclusions reached in the paper support the proposal, independently argued for in the literature, that unaccusatives are underlyingly causative predicates.[23] The paper also provides evidence for a model of event structure where the aspectual properties of events are configurationally and compositionally defined in terms of recursive event structure,[24] and contributes to the debate on theta-theory by exploring the hypothesis, defended in her previous work with Davis (Davis & Demirdache 1995), that agentive and causative readings follow from the projection of two different event frames.

The issues discussed by Demirdache in her paper are closely related to those addressed by DAVIS, although they reach different conclusions with regard to unaccusative predicates. In "Deep Unaccusativity and Zero Syntax in St'át'imcets" Davis explores the sublexical syntax of predicates in St'át'imcets. This detailed study of the internal structure and morphology of predicates in this language has immediate consequences for the theory of argument structure and the formulation of the unergative/unaccusative distinction. In particular, Davis puts forth the following two claims: (i) all predicates are based on roots which are lexically associated with a single, internal argument; and (ii) all transitive and all unergative predicates are derived by morphosyntactic operations, which may be phonologically null. By adopting the mechanism of zero-derivation along the lines in Pesetsky (1995), Davis shows that his analysis extends to languages like English, where morphosyntactic operations on predicates are often nontransparent and covert. While previous analyses

(23) See Chierchia (1989), Reinhart (1991) and Levin & Rappaport Hovav (1995), among others.
(24) See, among others, Pustejovsky (1987, 1991) and van Hout (1993, to appear).

have traditionally treated both unergative and unaccusative as two subclasses of primitive, intransitive verbs (Permutter 1978), or treat some unergative as primitives and some unaccusative as derived (Levin & Rappaport-Hovav 1995), Davis concludes that unaccusative predicates are primitives while unergatives are derived. The same conclusion is reached by Hale & Keyser (1993, this volume). Davis' paper also bears directly on the controversial question of whether theta roles are primitives or not. Following Davis and Demirdache (1995), Davis argues that the event-structure representation of a predicate (in the sense of Pustejovsky 1991) determines the projection of arguments into the syntax. His position is that predicates come lexically equipped with a single, underspecified "theme" argument; other theta roles, including the *agent* theta-role, must be added by manipulating the aspectual structure. Thus, like a number of the authors in this volume, the hypothesis defended by Davis is that theta-roles are derivative. Davis further discusses a set of agentive unaffixed intransitives, referred to as *control roots* in the Salishean literature. He argues that control roots are derived and shows that their behavior parallels the class of overtly derived intransitives which are usually termed "middles", "antipassives" and "low transitive predicates".

A particularly puzzling problem that arises from the conclusions reached by DEMIRDACHE and DAVIS regarding unaccusative predicates in their respective papers is that while, as Davis shows, there is strong evidence that unaccusatives are morphologically primitive in St'át'imcets, there are also strong arguments for assuming that they have underlyingly causative semantics, as Demirdache demonstrates.[25]

The proper representation of unaccusative verbs is also discussed by RIGAU, as a consequence of the analysis of locative and existential sentences with *ésser* 'be' and *haver* 'have' in her paper "Locative Sentences and Related Constructions in Catalan: *ésser*/*haver* Alternation". Her account of these constructions in Catalan is based on Hale & Keyser's hypothesis that heads appear in lexical relational structures (LRS) which are the proper representation of argument structure. It is at this level that processes such as preposition incorporation, which plays a crucial role in her analysis, take place. Following Kayne (1993) (see also other references in Rigau's paper), Rigau assumes that *haver*, which obligatorily appears with the clitic *hi (haver-hi)* is an instance of *ésser* with an abstract central coincidence preposition incorporated into it. In fact, these verbs share the same LRS, but they differ in the overt/covert nature of the preposition, which when overt does not incorporate into the verb (for *ésser*). The different behavior of these verbs regarding preposition incorporation has important consequences for their syntactic properties. Empirically, it accounts for why these two verbs appear in complementary distribution as well as for the fact that *haver-hi* appears in impersonal sentences, as opposed to *ésser*. From a theoretical perspective, a lot of the differences between the syntactic behavior of these two verbs are related to Case, in a system where AGRs and AGRo may be active or inactive for the checking of Case-features (following Chomsky 1993). The incorporation of the abstract preposition to the verb in the *haver* construction provides this verb with the possibility of checking accusative Case, contrary to *ésser*,

(25) The reader is referred to Davis and Demirdache (1997) for recent discussion on how to accommodate these conflicting results.

which lacks a Case-feature, so that AGRo is inactive. Conversely, AGRs with *haver* may not check nominative Case. In fact, in the analysis developed by Rigau, AGRs is split so that nominative checking is associated with a PersonP, while NumberP is the phrase which checks whatever feature is relevant for the satisfaction of the Extended Projection Principle (a D-feature in Chomsky 1995). Different specifications of these two heads allow Rigau to account for a number of differences among Catalan dialects concerning these structures, which is line with current ideas that variation across languages results from different specifications of morphological features in the Lexicon. The analysis is extended to constructions with transitive and intransitive light verbs, supporting the idea that certain unergative Vs may act as unaccusatives when they co-occur with locative elements (see Torrego 1988 and Hoekstra & Mulder 1990). A conclusion that follows from Rigau's approach in this paper is that there is not a class of unaccusative verbs; what we have, instead, is a set of unaccusative argument structures, which can be the result of preposition incorporation to unergative verb structures.[26]

Another of the papers in this volume which deals with aspects of Romance morphosyntax from the point of view of the relation between lexical and syntactic structures is DEMONTE & VARELA's "Spanish Event Infinitives: from Lexical Semantics to Syntax and Morphology." Their concern is to specify how the lexical semantic properties of event infinitives determine their morphological and syntactic properties. It is by postulating the existence of an event [+e] feature as part of the morphological specification of the infinitive head and the presence of an event argument in the structure that Demonte & Varela make this relation explicit. Their proposal is that the event feature of the nominal infinitive has to enter a checking operation in the syntax against a matching feature in a functional head (F), within a framework like that developed by Chomsky (1995) in which morphological features enter checking operations in the syntax. This analysis allows them to account for a variety of semantic and syntactic properties of the construction, as well as for the differences between event infinitives and related structures with action nominals. Semantically, the two readings associated with constructions with event infinitives (concrete-existential and habitual-manner) are the result of different linking relations involving the event argument and an existential or a generic quantifier: if the event argument in [SPEC, FP] is bound by an existential quantifier, the concrete-existential reading obtains; if this element is bound by a generic quantifier, the habitual-manner reading obtains. The semantic properties of infinitive heads, as well as the syntactic structure in which they appear (with no AgrP between DP and NP), allow Demonte & Varela to explain why only manner adjectives are found in these constructions, while speaker-oriented and subject-oriented adjectives are excluded. Syntactically, one of the most interesting contributions of this paper is that the infinitive head is unambiguously classified as a nominal head; i.e. the display of both nominal and verbal properties of the structure which led to postulate a 'neutral' categorial specification of the infinitive head in previous analysis is handled here by resorting

(26) Rigau's proposal that person and number agreement are checked in different positions is in accord with recent work on split-ergativity and on well-known restrictions on the possible morphological combinations of person agreement markers (see, in particular, Albizu 1997, this volume, Fernández 1997, and Ormazabal 1997).

to the morphological specification of nominal elements. Crucially, infinitive heads are nouns with an event feature as part of their morphological import in the Lexicon. The categorial classification of the infinitive head as a noun allows Demonte & Varela to account for the fact that full lexically realized DPs requiring accusative Case or accusative clitics are banned in these structures, as opposed to bare nouns which incorporate into the infinitive head and may appear as internal arguments of the infinitive. The nominal eventive character of the infinitive explains also why negation cannot appear in these structures in Demonte & Varela's approach, thus accounting for a wide variety of empirical facts concerning event infinitives in Spanish.

III. The third group of papers address the issue of parametric variation, in particular the split between accusative and ergative languages and the polysynthesis parameter, from the point of view of the morphology-syntax interface.

In "Nested Paths in Syntactically Ergative Languages", MURASUGI explores the ergativity parameter within the current view that the ergativity split derives from the differences in the movement of argument NPs from VP to the position where they are assigned Case (that is, the idea that ergative languages differ from accusative languages regarding the particular movements undergone by NPs and the landing sites they reach). Murasugi's proposal thus has to be understood within the minimalist hypothesis that syntactic differences among languages can be derived from morphological factors. Her proposal is that while there is no difference in the structure and derivation of intransitive clauses in ergative and accusative languages (in both types of languages, the intransitive subject (S) raises to [SPEC, IP]), the split between ergative and accusative languages, derives from differences in the derivation of transitive clauses. In accusative languages, the transitive subject (A) raises to [SPEC, IP], and the object of a transitive verb (O) raises to the specifier of a projection located in between IP and VP, namely to [SPEC, Tr(ansitive)P]. Accusative languages thus exhibit crossing paths in the movement of argumental NPs. The central claim of her paper is that in ergative languages the movement of A and O is reversed: O raises to [SPEC, IP], a functional projection higher than [SPEC, TrP], the position where A moves. Consequently, in contrast with accusative languages, syntactically ergative languages exhibit nested paths movement (see Chomsky 1993).

Her particular analysis concerning the differences in the movement realized by A and O in ergative and accusative languages can also explain the differences displayed by the two types of languages regarding a wide range of morphological and syntactic phenomena. In particular, it explains why in ergative languages which exhibit double verbal agreement A-agreement is closer to the verb than O-agreement, while the reverse situation seems to obtain in accusative languages. It also explains some puzzling differences in scope displayed by the two type of languages. The answer to why the A argument in ergative languages behaves like the O argument in accusative languages —allowing both narrow and wide scope readings—, and why the O argument in ergative languages show scopal properties like those of the A in accusative languages is based on structural differences in the positions occupied by argumental NPs at the level of LF. Murasugi's analysis further explains why relativization in participial relative clauses in ergative languages is generally restricted to S and O, and not to A and S as in accusative languages. Following a long tradition,

Murasugi derives why ergative languages have nested paths while accusative languages exhibit crossing paths from a difference in the Case assigning properties of the verb. She argues that in ergative languages, the verb does not assign Case; thus, only Shortest Movement will determine how argument NPs will move to their Case assigning positions. In accusative languages, in contrast, the verb can assign structural Case. Due to a condition on the way in which the verb can assign Case in a spec-head relation, the object has no option but to move to [SPEC, TrP] in accusative languages. Thus, in accusative languages, the assignment of Case by V overrides Shortest Movement, resulting in crossing paths. What follows from here is that Shortest Movement applies only in cases where a choice of derivations is available. This analysis predicts that whenever there is no Case condition relevant to A'-movement in accusative languages, we expect to find nested paths: the Superiority Effects found in accusative languages seem to confirm this prediction. Murasugi's analysis shares with Mahajan 1990, Murasugi 1992, Bittner 1994, and Bittner & Hale 1996, among others, the assumption that in ergative languages O is higher than A at some point in the derivation, and constitutes a valuable competing analysis to the alternative approach which assume that in ergative languages the transitive subject (A) raises higher than the object (O) —as proposed in Bobaljik (1992), Chomsky (1993), and Albizu (this volume), among others.

In "Parametric Variation in Determiner Systems: Salish vs. English", MATTHEWSON addresses the issue of the polysynthesis parameter, and more in particular of the parametric differences between English and Salish (a family of radical head-marking, predicate initial Amerindian languages) through the examination of the languages' respective determiner systems. It is proposed that Salish differs from English in lacking all presuppositional determiners, including definites and quantificational determiners. Salish languages, instead, encode on their determiners the existential force or otherwise of overt arguments. In order to account for the Salish-English split, Matthewson introduces a binary parameter, the *Common Ground Parameter*, which divides human languages into those whose determiners may access the common ground of the discourse (English), and those whose determiners may not (Salish). In line with the view that confines parametric variation to lexically defined properties (Borer 1984, Chomsky 1995), she argues that the Common Ground Parameter can be stated at the level of the Lexicon. If the Lexicon is the only locus of parametric variation, what we expect is that the ability of certain syntactic structures to induce presupposition will be universal; the variation will be restricted to whether particular items, such as determiners, may induce presuppositions. This seems to be confirmed by the fact that Salish can access the common ground of discourse: presupposition can be induced by making use of syntactic constructions such as clefting. With regard to how children specify the value of this parameter, Matthewson proposes that the default setting of the Common Ground Parameter is negative: children start by assuming a Salish-type system and do not switch to an English-type system until positive evidence is provided. The triggering element for such switching will be any quantificational determiner. An interesting feature of Matthewson's analysis is that the Common Ground Parameter has implications beyond the determiner system. In particular, her approach is consistent with Salish deictic system, which is speaker (and not hearer) oriented. The Common Ground Parameter also predicts that if any

morphological marking of an event is present it will only express speaker knowledge, a prediction that seems to be in accordance with the facts. A distinctive feature of Matthewson's analysis is that, in contrast with previous approaches to the split between English-type and Salish-type languages such as Jelinek (1995) and Baker (1995), the differences between these languages are not assumed to follow from the specification of a single, macro-parameter which seeks to tie syntactic and semantic phenomena to morphological features such as head marking. Matthewson discusses these alternative analyses and argues that multiple parameter settings are needed to account for all the features of Salish languages. This conclusion is consistent with Hale (1985) and Speas (1990), for whom there is no single parameter which can derive the various properties usually associated with 'non-configurationality'.

* * *

The papers that follow thus offer an overview of new trends in the morphology-syntax connection through the investigation of a wide range of empirical facts in a broad sample of languages and address theoretical issues which are at the center of debate and discussion in current linguistic theory.

References

Abney, S. P., 1987, *The English noun phrase in its sentential aspect,* Ph.D. Dissertation, M.I.T.

Ackema, P., 1995, *Syntax below zero*, OTS Dissertation Series, Utrecht, The Netherlands.

Albizu, P., 1997, *The syntax of Person agreement*, PhD Dissertation, University of Southern California.

Allen, M. R., 1978, *Morphological investigations*, PhD Dissertation, University of Connecticut.

Alsina, A., 1992, "On the argument structure of causatives", *LI* 23, 517-556.

Anderson, S., 1982, "Where is morphology?", *LI* 13, 571-612.

——, 1992, *A-morphous morphology*, Cambridge University Press, Cambridge.

Aronoff, M., 1976, *Word formation in generative grammar*, MIT Press, Cambridge, Massachusetts.

——, 1994, *Morphology by itself*, MIT Press, Cambridge, Massachusetts.

Bach, E., E. Jelinek, A. Kratzer & B. Partee, (eds.), 1995, *Quantification in natural languages*, Kluwer, Dordrecht,

Baker, M., 1985, "The mirror principle and morpho-syntactic explanation", *LI* 14, 373-415.

——, 1988, *Incorporation: A theory of grammatical function changing,* Chicago University Press: Chicago.

——, 1995, "On the absence of certain quantifiers in Mohawk", in Bach et al. (eds.), 21-58.

——, 1996, *The Polysynthesis Parameter,* Oxford University Press, New York.

Beard, R., 1991, "Lexeme-morpheme base morphology". Ms., Bucknell University.

Belletti, A., 1990, *Generalized verb movement,* Rosenberg & Sellier, Torino.

Bittner, M., 1994, *Case, scope and binding*, Kluwer, Dordrecht.

——, & K. Hale, 1996, "Ergativity: towards a theory of heterogeneous class", *LI* 27, 531-604.

Bobaljik, J. D., 1992, "Nominally absolutive is not absolutely nominative", *Proceedings of the eleventh West Coast Conference on Formal Linguistics,* University of California, Los Angeles, 44-60.

Bonet, E., 1991, *Morphology after syntax: Pronominal clitics in Romance*, PhD Dissertation, MIT.

——, 1994, "The Person-Case constraint: a morphological approach", in H. Harley & C. Phillips (eds.) *The Morphology-Syntax Connection, MIT Working Papers in Linguistics* 22, 33-52.

Borer, H., 1984, *Parametric Syntax*, Dordrecht, Foris.

——, 1993, "On the projection of arguments", in E. Benedicto & J. Runner (eds.), *Functional Projections,* GLSA, UMass, Amherst, 19-48.
Cheng, L. & H. Demirdache, 1993, "External arguments in Basque", in J. I. Hualde & J. Ortiz de Urbina (eds.) *Generative studies in Basque Linguistics,* John Benjamins, Amsterdam, 71-89.
Chierchia, G., 1989, "A semantics for unaccusatives and its syntactic consequences". Ms. Cornell University, Ithaca, NY.
Chomsky, N., 1965, *Aspects of the theory of syntax*, MIT Press, Cambridge, Massachusetts.
——, 1970, "Remarks on nominalization", in R. A. Jacobs and P. S. Rosenbaum (eds.), *Readings in English Transformational Grammar,* Ginn and Co., Waltham, Massachusetts, 184-221.
——, 1986, *Barriers*, MIT Press, Cambridge, Massachusetts.
——, 1991, "Some notes on economy of derivation and representation", in R. Freidin (ed.), *Principles and parameters in comparative grammar*, MIT Press, Cambridge, Massachusetts, 417-454. [Spanish translation by J. Ormazabal & Myriam Uribe-Etxebarria in *ASJU* 25.3 (1990) 659-696].
——, 1993, "A minimalist program for linguistic theory", in K. Hale and S. J. Keyser (eds.), 53-110.
——, 1995, *The Minimalist Program,* MIT Press, Cambridge, Massachusetts.
——, & M. Halle, 1968, *The sound pattern of English,* Harper and Row, New York.
Davis, H. & H. Demirdache, 1995, "Agents and events", paper presented at GLOW 1995.
——, 1997, "On lexical verb meanings: evidence from Salish". Paper presented at the "Events as Grammatical Objects" Workshop, LSA Summer Institute, U. of Cornell.
Demirdache, H., 1989, "Nominative NPs in Modern Standard Arabic". Ms. MIT.
Den Dikken, M., 1995, *Particles: On the syntax of verb particle, triadic and causative constructions,* Oxford University Press, Oxford.
De Rijk, R. P. G., 1966, "Redefining the ergative". Ms. MIT.
Di Sciullo, A. M. & E. Williams, 1987, *On the definition of word*, MIT Press, Cambridge, Massachusetts.
Diesing, M., 1992, *Indefinites*, MIT Press, Cambridge, Massachusetts.
Dowty, D. R., 1991, "Thematic proto-roles and argument selection", *Lg* 67, 547-619.
Emonds, J., 1976, *A Transformational Approach to English Syntax*, Academic Press, New York.
Fabb, N., 1988, "English suffixation is constrained only by selectional restrictions", *NLLT* 6, 527-539.
Fernández, B., 1997, *Egiturazko Kasuaren erkaketa euskaraz*, PhD Dissertation, University of the Basque Country.
Franco, J., 1993, *On object agreement in Spanish*, PhD Dissertation, University of Southern California.
Hale, K., 1985, "On nonconfigurational structures". Ms. MIT [= *ASJU* 20.2 (1986), 351-358].
——, & S. J. Keyser, 1986, "Some transitivity alternations in English", *Lexicon Project Working Papers* 7, Center for Cognitive Science, MIT [= *ASJU* 20.2 (1986), 605-638].
——, & ——, 1991, "On the syntax of argument structure". *Lexicon Project Working Papers*, Center for Cognitive Science, MIT.
——, & ——, 1993, "On argument structure and the lexical expression of syntactic relations", in Hale and Keyser (eds.), 53-108.
——, & ——, 1993, (eds.), *The view from Building 20: Essays in honor of Sylvain Bromberger*, MIT Press, Cambridge, Massachusetts.
Halle, M., 1973, "Prolegomena to a theory of word formation", *LI* 4, 3-16.
——, & A. Marantz, 1993, "Distributed morphology and the pieces of inflection" in Hale and Keyser (eds.), 111-176.
——, & K. P. Mohanan, 1985, "Segmental phonology of Modern English", *LI* 16, 57-116.
Hendrick, R., 1991, "The morphosyntax of aspect", *Lingua* 85, 171-210.
——, 1995, "Morphosyntax", in G. Webelhuth (ed.), 297-348.
Hoekstra, T. & R. Mulder, 1990, "Unergatives as copular verbs; locational and existential predication", *The Linguistic Review* 7, 1-79.
Hualde, J. I., 1988, *A Lexical Phonology of Basque*, Rutledge.

Jackendoff, R., 1972, *Semantic interpretation in generative grammar*, MIT Press, Cambridge, Massachusetts.
——, 1990, *Semantic Structures*, MIT Press, Cambridge, Massachusetts.
——, 1991, "Parts and boundaries", *Cognition* 41, 9-45.
Jacobs, R. A. & P. S. Rosebaum (eds.), 1970, *Readings in English transformational grammar*, Waltham, Ginn.
Jelinek, E., 1984, "Empty categories, case and configurationality", *NLLT* 2, 39-76.
——, 1988, "The case split and pronominal arguments in Choctaw", in L. Marácz & P. Muysken (eds.).
——, 1989, "Argument type in Athabaskan: Evidence from noun incorporation". Ms. University of Arizona, Tucson.
——, 1995, "Quantification in Straits Salish", in E. Bach et al. (eds.), 487-540.
Kayne, R., 1993, "Toward a modular theory of auxiliary selection", *Studia Linguistica* 47, 3-31.
——, 1994, *The antisymmetry of syntax*, MIT Press, Cambridge, Massachusetts.
Kiparsky, P., 1982, *Explanation in phonology*, Dordrecht, Foris.
Koopman, H. & D. Sportiche, 1991, "The position of subjects", *Lingua* 85, 211-258.
Kuroda, S. Y., 1988, "Whether we agree or not: A comparative syntax of English and Japanese", *Linguisticae Investigationes* 12, 1-47.
Laka, I., 1990, *Negation in syntax: On the nature of functional categories and projections*, PhD Dissertation, MIT.
Lakoff, G., 1968, "Instrumental adverbs and the concept of Deep Structure", *Foundations of Language* 4, 4-29.
——, & J. Ross, 1976 (1967), "Is Deep Structure necessary?", J. McCawley (ed.).
Lapointe, S., 1980, *A theory of grammatical agreement,* PhD Dissertation, University of Massachusetts, Amherst [published 1985, Garland, New York]
——, 1988, "Toward a unified theory of agreement", in M. Barlow & C. A. Ferguson (eds.) *Agreement in natural language: Approaches, theories, descriptions,* Center for the Study of Language and Information, Stanford, 67-87.
Larson, R. K., 1988, "On the double object construction", *LI* 19, 335-391.
Levin, B. & M. Rappaport-Hovav, 1995, *Unaccusativity: At the syntax-lexical semantics interface*, MIT Press, Cambridge, Massachusetts.
Lieber, R., 1992, *Deconstructing morphology: Word formation in syntactic theory,* University of Chicago Press, Chicago.
McCawley, J., 1970 (1968), "Where do noun phrases come from", in R. A. Jacobs & P. S. Rosebaum (eds.), 166-183.
——, 1976, (ed.) *Syntax and Semantics*, Academic Press, N.Y.
Mahajan, A., 1990, *The A/A-bar distinction and movement theory*, PhD Dissertation, MIT.
Marácz, L. & P. Muysken (eds.), 1988, *Configurationality: The typology of asymmetry*, Foris, Dordrecht.
Marantz, A., 1984, *On the nature of grammatical relations,* MIT Press, Cambridge, Massachusetts.
——, 1995, "The Minimalist Program", in G. Webelhuth (ed.), 349-382.
Mascaró, J., 1976, *Catalan phonology and the phonological cycle*, PhD Dissertation, MIT. [Distributed by IULC].
Mohanan, K. P., 1982, *Lexical Phonology*, Indiana University Club, Bloomington.
——, 1986, *The theory of Lexical Phonology*, Dordrecht, Reidel.
——, & T. Mohanan, 1984, "Lexical Phonology of the consonant system in Malayalam", *LI* 15, 575-602.
Mendikoetxea, A., 1992, *On the nature of agreement: The syntax of ARB SE in Spanish*, PhD Dissertation, University of York, G. B.
Murasugi, K. G., 1992, *Crossing and nested paths: NP movement in accusative and ergative languages*, PhD Dissertation, MIT.
Neeleman, A., 1994, *Complex Predicates*, PhD Dissertation, University of Utrecht.
Newmeyer, F., 1980, *Linguistic theory in America —The first quarter century of transformational grammar*, Academic Press, N.Y.

Nunes, J., 1996, *The copy theory of movement and the linearization of chains in the Minimalist Program*, PhD Dissertation, University of Maryland.
Ormazabal, J., 1997, "A conspiracy theory of Case and agreement", in *Step by Step*, R. Martin, D. Michaels & J. Uriagereka (eds.), MIT Press, Cambridge, Massachusetts. (in press)
Ouhalla, J., 1993, "Subject-extraction, negation and the anti-agreement effect", *NLLT* 11, 477-519.
Perlmutter, D. M., 1978, "Impersonal passives and the unaccusative hypothesis", *Proceedings of the Fourth Annual Meeting of the Berkley Linguistics Society*, BLS, University of California, Berkley, 157-189.
——, 1988, "The split morphology hypothesis: Evidence from Yiddish", in M. Hammond & M. Noonan (eds.) *Theoretical morphology: Approaches in modern linguistics*, Academic Press, San Diego, 79-100.
Pesetsky, D., 1979, "Russian morphology and lexical theory". Ms. MIT.
——, 1995, *Zero syntax: Experiencers and cascades*, MIT Press, Cambridge, Massachusetts.
Pollock, J.-Y., 1989, "Verb movement, universal grammar, and the structure of IP", *LI* 20, 365-424.
Pustejovsky, J., 1987, "The geometry of events", in C. Tenny (ed.) *Generative approaches to aspect*, MIT Lexicon Project Working Papers, Cambridge, Massachusetts.
——, 1991, "The syntax of event structure", *Cognition* 41, Blackwell, Oxford.
Reinhart, T., 1991, "Lexical properties of ergativity", paper presented at the Workshop on Lexical Specification and Lexical Insertion, University of Utrecht.
Ritter, E., 1991, "Two functional categories in noun phrases: evidence from modern Hebrew", in S. D. Rothstein (ed.), *Perspectives on phrase structure heads and licensing, Syntax and Semantics* 25, Academic Press, San Diego, 501-557.
Selkirk, E., 1982, *The syntax of words*, MIT Press, Cambridge, Massachusetts.
Shlonsky, U., 1989, "The hierarchical representation of subject-verb agreement". Ms. University of Haifa, Israel.
——, 1995, *Clause structure and word order in Hebrew: An essay in comparative Semitic syntax*. Ms. Université de Genève.
Siegel, D., 1979, *Topics in English morphology*, Garland, New York.
Speas, M., 1990, *Phrase structure in natural languages*, Kluwer, Dordrecht.
Spencer, A., 1991, *Morphological Theory*, Blackwell, Oxford.
——, & A. Zwicky (eds.), 1997, *The handbook of morphology*, Blackwell, Oxford.
Sproat, R., 1985, *On deriving the lexicon*, PhD Dissertation, MIT.
Travis, L., 1984, *Parameters and effects of word order variation*, PhD Dissertation, MIT.
——, 1991, "Derived objects, inner aspect, and the structure of VP", paper presented at NELS 1991.
Torrego, E., 1986, "DPs", unpublished ms. University of Massachusetts, Boston.
——, 1988, "Unergative-unaccusative alternations in Spanish", in I. Laka & A. Mahajan (eds.), *MIT Working Papers in Linguistics* 10, *Functional heads and clause structure*, 253-272.
Uriagereka, J., 1997, "Multiple spell-outs". Ms. University of Maryland.
van Hout, A., 1993, "Projection based on Event Structure", in M. Everaert & J. Grimshaw (eds.), *Lexical Specification and Lexical Insertion*, Laurence Erlbaum Associates, Hillsdale, NJ.
——, to appear, *The event semantics of verb alternations: A case study of Dutch and its acquisition*, PhD. Dissertation, Tilburg University.
Webelhuth, G., (ed.), 1995, *Government and Binding Theory and the Minimalist Program*, Blackwell, Oxford.
Williams, E., 1981, "On the notions 'lexically related' and 'head of a word'", *LI* 12, 245-274.
Zagona, K., 1982, *Government and proper government of verbal projections*, PhD Dissertation, University of Washington, Seattle.
Zanuttini, R., 1991, *Syntactic properties of sentential negation: A comparative study of Romance languages*, PhD Dissertation, University of Pennsylvania.