

Syntax within the Word

Economy, allomorphy,
and argument selection
in Distributed Morphology

Daniel Siddiqi

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Preface and acknowledgements

As a syntactician and a morphologist, I have always been enamored with Distributed Morphology. Ever since I first encountered it (in Heidi Harley's Morphology course at The University of Arizona), whenever I read a paper or saw a presentation, I found myself thinking about how that would be done in DM. Ultimately, I found my niche in graduate school (and since) to be considering familiar data from the point of view of DM. At the same time, I read Harley & Noyer (2000) and loved what they had done by giving an analysis of argument selection in DM. I was confused, though, as to where exactly their subcategorization was happening and what mechanism was driving it. When I asked her why they didn't use features to do the work, Heidi, always the good teacher, challenged me to do it. My answer to her challenge eventually grew out of proportion and I found myself tackling much of the data that I was asking questions about. At some point I got stuck and realized that DM couldn't do what I wanted to do without some revision to the theory itself. I set about making those revisions (the introduction of a feature blocking system, the proposal of default fusion) and I found that I was very happy with what I saw as a simpler model of DM (the function of readjustment rules was absorbed by other parts of the grammar in my new model). Eventually, with the support of my teachers, advisors, and colleagues, these proposals grew into my dissertation.

After some time, Andrew Carnie and Elly van Gelderen suggested to me that my dissertation, which was in large part a discussion of the strengths and weaknesses of Distributed Morphology, could be adapted to fill a need in Benjamin's Linguistics Today series as an introduction to the theory of Distributed Morphology. I thought this was a fantastic idea. Since I so much like the theory, I thought it would be fantastic to write a book that would hopefully broaden the appeal of the theory as well as showcase the revisions to the model that I have proposed previously. I also thought that this would be an interesting chance for me to revise my original ideas and cover more data than I had in the dissertation.

What you will find here is largely a revision of my dissertation from the University of Arizona. I have shifted the focus to be more on the framework of DM and less on economy (though that is obviously a prevalent theme). I have also added much more discussion on the verbal complex including material that I first presented at a conference in Tucson in 2007.

My hope is that this book will appeal to several different audiences. The primary audience is to first and second year graduate students in linguistics for whom Part One will make a good introduction to Distributed Morphology. The second audience I hope to reach are those theorists who already work in DM and will find my revisions to be exciting. Finally, I hope that a broader audience with an interest in argument selection and word building will be interested in the data and the analyses contained herein.

Since this grew out of my dissertation, the number of people that I am indebted to for this is absolutely huge. As for this book in particular, I want to thank Andrew Carnie, Elly van Gelderen, and Werner Abraham for their editing comments and revision suggestions on this version. I also want to thank Jeff Punske, Dave Medieros, Jason Haugen, Scott Jackson, Andrew Carnie and Heidi Harley for feedback on the new content included here. I also want to thank my wife, Julianna, for her support while I worked on this.

List of abbreviations

UG	Universal Grammar
GB	Government and Binding Theory; also the tradition that arises from the theory.
DM	Distributed Morphology: A framework of grammar within the GB tradition.
LFG	Lexical Functional Grammar: A theory of grammar that competes with the GB model.
HPSG	Head-driven Phrase Structure Grammar: A theory of grammar that competes with the GB model.
OT	Optimality Theory: A theory of grammar that competes with the G/B model.
LF	Logical Form: The step in a derivation that is interpretable.
PF	Phonological Form: The step in a derivation that is pronounceable.
VI	Vocabulary Item: An individual entry in vocabulary (or lexicon) that corresponds functional and content meaning to specific sounds.
n(P)	Little N (Phrase): Functional head projected above the root to form nominals.
N(P)	Noun (Phrase): Lexical head that receives case among other features.
A(P)	Adjective or Adverb (Phrase). Lexical head that modifies nouns and verbs, among other features. Also the functional head projected above a root to form an adverb of adjective.
v(P)	Little V (Phrase): Functional head projected above the root to form verbs. Also assigns nominative case and licenses agents among other features.
V(P)	Verb (Phrase): Lexical head that normally denotes an event and licenses arguments, among many other features.
P(P)	Preposition (Phrase)
TRANS(P)	Transitivizer (Phrase): Functional head that introduces objects and makes a verb transitive.
G(P)	Goal (Phrase): Functional head that introduces indirect objects and makes a verb ditransitive.

L(P)	Locative (Phrase): Functional head that introduces locative arguments.
AGROP	Object Agreement (Phrase): Functional head that is the locus of verbal agreement with its object; also the locus for accusative case.
X ⁰	Head of a phrase, bottom most projection of a head.
X'	Intermediate projection of a head.
XP	Top most projection of a head.
Spec	Specifier: Daughter of top most projection of a head. Locus of case assignment and argument projection among others.
√	Root: A feature of UG that is manipulated by the syntax. Roots provide the extra-linguistic (contentful) material to an utterance.
√ARRIVE	A specific root linked to a specific concept.
ECM	Exceptional Case Marking: the phenomenon in English whereby the subject of non-finite subordinate clauses are marked with accusative case rather than nominative case.

Table of contents

Preface and acknowledgements	IX
List of abbreviations	XI
PART 1. Introduction	
CHAPTER 1	
Syntax within the Word	3
CHAPTER 2	
Distributed Morphology	7
1. Late-insertion	7
2. Morphosyntactic decomposition	8
3. Underspecification	9
4. Why reject Lexicalism?	10
5. Construction of an utterance	13
6. Spellout, competition, and the subset principle	14
7. The distinction between functional and contentful	18
8. Lexical categories in DM	20
9. Special meanings and the Encyclopedia	20
CHAPTER 3	
Morphological operations in DM: From spellout to PF	23
1. Morphological merger	23
2. Fission and fusion	24
3. Readjustment rules	25
PART 2. On a theory of root allomorphy	27
CHAPTER 4	
Root allomorphy	29
1. Roots in the grammar	31
2. Licensing insertion	32
3. Alternative analysis of root allomorphy	36
4. Competition of roots revisited	38

CHAPTER 5	
Simplifying DM	41
1. Readjustment rules	41
2. Licensing	43
3. Null heads	44
CHAPTER 6	
Expansion of the fusion analysis	47
1. The \neg specification	49
2. Enter MINIMIZE EXPONENCE	51
CHAPTER 7	
Inflection in compounds	55
1. MINIMIZE EXPONENCE analysis	58
CHAPTER 8	
Interim conclusions	65
PART 3. Argument selection	67
CHAPTER 9	
Argument selection within Distributed Morphology	69
1. Subcategorization	69
2. Subcategorization within DM	72
CHAPTER 10	
MINIMIZE EXPONENCE based account of subcategorization	75
1. Determining the feature specification of a vocabulary item	77
2. Differences among subcategorization models	83
3. Evidence for the feature [v] in english	84
4. Blocking “extra” arguments	85
CHAPTER 11	
Subcategorization expanded	89
1. Rampant polysemy	89
2. Structural coercion	93
3. Dative alternations	94

CHAPTER 12	
The nature of verbs	99
1. Category selection	99
2. The status of the verb phrase	100
2.1 Argument 1: The difference between patient and proposition	100
2.2 Argument 2: Co-occurrence of patient and proposition	101
2.3 Argument 3: Exceptional Case Marking	102
2.4 Argument 4: The Adjacency Condition	104
3. Verb classes	108
CHAPTER 13	
Interim conclusions, redux	111
PART 4. Odds and ends	113
CHAPTER 14	
Event semantics	115
1. Parsons (1990)	116
2. Neo-Davidsonianism Meets Syntax	118
3. Remaining questions	120
CHAPTER 15	
Typology and theory	123
1. Typological predictions	123
2. On feature specification and the Elsewhere Principle	125
3. Further research?	126
CHAPTER 16	
Conclusions	129
1. Some final thoughts	132
References	133
Index	137

PART 1

Introduction

Syntax within the Word

The study of the language faculty must address a central conflict about the grammar: On one hand, we have the need to convey a message and the need for that message to be as clear as possible. On the other hand, we need our message to be as efficient as possible. These opposing forces, contrast and efficiency, are the driving force behind a host of phenomena we see in language. For example, a number of phonological processes such as place or voice assimilation make utterances easier to say while processes such as dissimilation make the contrasts more transparent.

This conflict is prevalent in much of the linguistic literature. Optimality Theory (Prince & Smolensky 1993) captures this conflict using two classes of constraints on the grammar: faithfulness constraints ensure that contrastive meanings of an utterance aren't destroyed by the need to be efficient while markedness constraints capture that need for efficiency. In such a model, a grammar with all faithfulness constraints ranked above markedness constraints would result in a language that is maximally contrastive but is a mouthful to use, while the opposite ranking would result in a language that is maximally efficient but has eliminated the vast majority of its contrasts – making it unable to actually convey any meaning.

In historical linguistics, these forces are seen in cases where a language changes to make itself more efficient or to make itself more contrastive. For example, the loss of a sound in a language means a more efficient (easier) system at the cost of losing a contrast (e.g., the loss of the /ɛ/ sound in some dialects of English results in the loss of the contrast between the words *pin* and *pen*). Similarly, adding a contrast (e.g., some dialects have added a new form for the second person plural, *you guys*, *y'all*, or *youse*, to contrast against the second person singular *you*) makes a system more contrastive at a cost of efficiency.

In many ways, language is shaped by this central struggle between contrast and efficiency. However, in the realm of syntax (and by extension morphosyntax), this struggle is largely ignored by theoreticians. A grammar that was maximally contrastive would not have structural ambiguity (e.g., *I saw the man with the telescope*) yet, would result in pronouncing every single functional head and every single formal feature in a maximally contrastive manner (e.g., one feature = one morpheme). On the other hand, maximum efficiency would entail summing all the features of an utterance into one word (e.g., *Yup.*).

Since the Minimalist tradition (Chomsky 1995 and following) is composed of models of language competence rather than performance, it's not at all surprising that these competing forces are marginalized. The study of syntax is largely a question of what the system is and isn't capable of, not how that system is put to use. However, this results in a certain loss of predictive power. Limiting the discussion to the maximal pronunciation of formal features, there are two immediate concerns relevant to a model of Universal Grammar (UG) that need to be discussed. The first is the more obvious question: why don't languages pronounce more functional morphemes (thus realizing more formal features)? Interpretable features, especially in languages like English, are largely unpronounced, despite the fact that, according to the Minimalist tradition, they must be present in each derivation. Second, why do languages differ in the amount of the interpretable features that are realized by morphology and how they are realized?

The goals of *Syntax within the Word* are three-fold. The broadest of these goals is to propose a realization of this central conflict within morphosyntactic theory. Minimalist tradition has included a number of economy constraints on the grammar whose purpose is to select the most economical derivation measured in energy used to create a derivation (e.g., GREED, PROCRASTINATE, SHORTEST MOVE, etc, see Chomsky 1989; Rizzi 1990; Adger 1994). If the reader is unfamiliar with the nature of economy within the grammar, I strongly recommend examining Elly van Gelderen's (2004) book in this series, *Grammaticalization as Economy*, especially the second chapter.

One purpose of this book is to propose a new economy constraint: one that selects the most economical derivation measured in energy used to *produce* it. We can create an economy constraint that captures the competing forces on the grammar – in particular the balance necessary in pronouncing all the interpretable features of a given derivation in the most efficient way possible. I propose the following constraint:

(1) MINIMIZE EXPONENCE

The most economical derivation will be the one that maximally realizes all the formal features of the derivation with the fewest morphemes.

The gist of this constraint is that the best utterance is the one that conveys the most amount of information with the least effort (measured in number of morphemes that have to be pronounced). In terms of the production of an utterance, this constraint captures the struggle between the need to be maximally contrastive and the need to be maximally efficient.

I will focus this book on exploring the role that this constraint has on the model of the grammar by specifically looking at the effects of MINIMIZE EXPONENCE on analyses of familiar morphosyntactic phenomena as well as the effect that its presence has on the model of grammar itself.

The second goal of this book is to familiarize the reader with the morphosyntactic framework of Distributed Morphology (DM), proposed in the early 1990's by Halle and Marantz. Distributed Morphology is an exciting framework within the Government and Binding tradition and the Minimalist Program that is very appealing because it is a model of the syntax and a model of the morphological component of the grammar. By hypothesizing that the machinery that is responsible for the morphology of a language is the same machinery responsible for the sentence structure, DM drastically reduces the computational load of the model. It also proposes a simpler model of the grammar than the traditional Lexical model of the grammar. This simplicity is exciting as it has been a major goal of linguistics within the Minimalist Program as well as being a goal of science more generally as a result of Occam's Razor.

As I am hoping to introduce the reader to Distributed Morphology, I will assume no experience with DM whatsoever. However, of course, I had to assume some familiarity with syntactic phenomena and syntactic theory. In particular, I am assuming the reader has familiarity with the Government and Binding tradition as well as the fundamental workings of Minimalist Syntax. I am assuming about the familiarity you would get from reading Andrew Carnie's excellent introduction to contemporary Minimalist syntax, *Syntax, second edition* (2007). The rest of Part 1 is intended to provide the reader with a summary of the major parts of Distributed Morphology. Chapter 2 provides a survey of DM, specifically focusing on how it is different from Lexicalist Minimalism. Chapter 3 sketches the major morphological processes of DM.

The final purpose of this book is to propose revisions to Distributed Morphology in order to strengthen its appeal. To this end, I hope to propose a revision of DM that is even simpler than the model I will describe in Chapters 2 and 3. The use of MINIMIZE EXPONENCE will ultimately provide a means to remove readjustment rules from the grammar. Readjustment rules have a long tradition within morphological study as a mechanism to change a stem's phonology in certain environments. Despite their long tradition in morphology, readjustment rules are unlike any other aspect of the DM grammar or the Minimalist Program more generally in that they are transformational. Minimalism has at its core that the only mechanisms it employs are feature checking and combinatorics. Transformations represent another engine that can be removed from the grammar to propose a simpler, more elegant model.

Along the same lines, in keeping with the Minimalist Program, I will also propose revisions to Distributed Morphology to remove some of the less local processes that are a part of it now, such as secondary exponence and long distance licensing. Another of the core principles of the Minimalist Program is locality. The claim here is that by increasing the locality of the mechanisms within a model,