THE MORPHOSYNTAX-PHONOLOGY CONNECTION

LOCALITY AND DIRECTIONALITY AT THE INTERFACE

EDITED BY
VERA GRIBANOVA AND STEPHANIE S. SHIH

THE MORPHOSYNTAX-PHONOLOGY CONNECTION

Locality and Directionality at the Interface

Edited by
Vera Gribanova and Stephanie S. Shih

OXFORD
UNIVERSITY PRESS

Published 2017 by Oxford University Press.

OXFORD
UNIVERSITY PRESS

Oxford University Press is a department of the University of Oxford. It furthers the University's objective of excellence in research, scholarship, and education by publishing worldwide. Oxford is a registered trade mark of Oxford University Press in the UK and certain other countries.

Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America.

Library of Congress Cataloging-in-Publication Data
Names: Gribanova, Vera, editor. | Shih, Stephanie S., editor.
Title: The morphosyntax-phonology connection : locality and directionality at the interface / edited by Vera Gribanova and Stephanie S. Shih.
Description: Oxford University Press : Oxford ; New York, [2016] |
The contributions included in this volume arise from the Workshop on Locality and Directionality at the Morphosyntax-Phonology Interface, which took place at Stanford University on 12-14 October 2012.
Identifiers: LCCN 2016018902| ISBN 9780190210304 (hardcover) |
ISBN 9780190635329 (epub) | ISBN 9780190210328 (online)
Subjects: LCSH: Grammar, Comparative and general–Morphosyntax. | Grammar, Comparative and general–Phonology.
Classification: LCC P290 .M68 2016 | DDC 415–dc23 LC record available at https://lccn.loc.gov/2016018902

1 3 5 7 9 8 6 4 2
Printed by Sheridan Books, Inc., United States of America

THE MORPHOSYNTAX-PHONOLOGY CONNECTION

PREFACE

This volume is the result of a workshop titled "Workshop on Locality and Directionality at the Morphosyntax-Phonology Interface," which took place at Stanford University on October 12–14, 2012.

The editors have many people to thank for their intellectual, organizational, and financial support of the workshop and this volume. We are grateful to Ryan Bennett, Sandy Chung, Boris Harizanov, Sharon Inkelas, Beth Levin, and Jim McCloskey for extensive comments on the grant proposal that funded the workshop and for their generous support throughout the planning and execution of both the workshop and this resulting volume.

For organizational support we wish to thank Sue Learned-Driscoll, Terrence Boyd, Jr., Gabby Magana, Tom Wasow, Beth Levin, Dasha Popova, Natalia Silveira, and Melissa Carvell. Special thanks go to Bonnie Krejci and Matthew Adams for their hard work on copyediting the volume. Finally, we wish to thank Hallie Stebbins at Oxford University Press for guiding us through the process of putting the volume together.

We would also like to thank our external article reviewers: Artemis Alexiadou, Ryan Bennett, Ricardo Bermúdez-Otero, Emily Elfner, Jorge Hankamer, Alec Marantz, Joan Mascaró, Ad Neeleman, Jaye Padgett, Kevin Ryan, Daniel Siddiqi, Jochen Trommer, Hubert Truckenbrodt, and Kie Zuraw. We also thank two anonymous reviewers of our book proposal for their helpful comments.

Financial support for the workshop was provided by the National Science Foundation (BCS-1147461), Stanford University's School of Humanities and Sciences, and the Stanford Linguistics Department.

INTRODUCTION

The contributions included in this volume arise from the *Workshop on Locality and Directionality at the Morphosyntax-Phonology Interface*, which took place at Stanford University on October 12–14, 2012. The overarching goal of the workshop was to critically examine advancements on our understanding of the morphosyntax-phonology interface. Our practical aim was to connect two interface research areas that we believed were vitally important and productive but that did not heretofore have an established tradition of much exchange. The first area of investigation was *locality*, which attempts to identify the domains for phonological operations and asks how these domains are constrained by the morphosyntactic composition of words or phrases. The second area of investigation, *directionality*, refers to the question of how much access and influence syntax has to phonology and vice versa, at the interface between these two modules.

What arose from considering these two areas together was a slate of shared questions that cross-cut these two themes and that are fundamental to understanding the architecture of grammar, in particular at the interfaces:

- What (if any) are the relevant morphosyntactic domains for phonological operations?
- What (if any) are the relevant morphosyntactic domains to phonological exponence?
- To what extent can morphosyntactic and phonological information refer to each other, if at all?
- To what extent is phonological information relevant for morphosyntactic operations?
- Are rules and/or is optimization the basic underlying mechanism of linguistic grammar?
- Do grammatical processes proceed serially, or in parallel, or a combination of both?

These questions, and the consequences of the possible answers to them, are interweaved throughout the contributions presented in this volume. Drawing on field work,

experimental, and corpus data from a broad array of languages, each contribution presents arguments in favor of a particular answer or answers to some subset of these critical theoretical questions.

1.1 On morphosyntactic domains for allomorphy

In considering the connection of morphosyntactic domains to phonological ones, the relevant questions revolve around characterizing the most accurate notion of locality and building it into a theoretical framework. In such endeavors, some notion of cyclicity (either morphosyntactic or morphophonological, or both) is typically invoked, but the details vary widely. A number of chapters argue for strong structural or linear locality conditions on allomorphy. **Gribanova & Harizanov** present two case studies showing that putatively non-local or inward sensitive allomorphic alternations must be local (in Russian) and that morphosyntactic information must still be present even after phonological exponence has taken place (in Bulgarian). Likewise, **Harley, Tubino Blanco & Haugen** present evidence from Hiaki (Uto-Aztecan) in support of a strong locality constraint on suppletive conditioning. For **Deal & Wolf**, the relevant syntactic domain for phonologically conditioned suppletive allomorphy is the phase.

1.2 On the Targets of Exponence

Closely related to the issue of what the relevant domains are for phonological operations is the issue of what the relevant morphosyntactic targets are for phonological exponence.

Harley et al.'s work on suppletion in Hiaki considers the question of which morphosyntactic elements are subject to competition for Vocabulary Item insertion. They build a case for an analysis in which there is suppletion of Hiaki verbal roots triggered by number features. This argument calls into question the standing view of, for example, Embick & Halle (2005), which maintains that Root nodes cannot be subject to competition for insertion in the same way that featurally defined morphosyntactic terminal nodes are. It also feeds into a growing body of literature on the topic of root suppletion and the consequences of its availability for theories like Distributed Morphology—see, for example, Harley (2014) and responses contained in the same volume.

Taking a wider view, **Embick**'s chapter provides a comparison of theories in which the target of insertion is the individual syntactic terminal (representing an individual morpheme) versus theories in which multiple syntactic nodes (i.e. the cycle or phase—good examples are Spanning (Bye & Svenonius 2012, Merchant 2015) or Nanosyntax (Starke 2009, Caha 2009)) are taken collectively to be the targets of

phonological exponence. Embick draws on empirical evidence in synthetic/analytic alternations, allomorphic alternations, and so-called "double-marking" in which irregular stem allomorphy is accompanied by an exponent of the featural trigger of allomorphy. The conclusion in his chapter is that the examined evidence supports morpheme-based exponence theories.

On the other hand, **Inkelas**' chapter argues for a grammatical model—Optimal Construction Morphology (OCM; Caballero & Inkelas 2013)—in which the target of exponence is an abstract meaning target. OCM is a highly lexicalist extension of Cophonology Theory (Inkelas 1998, Inkelas & Zoll 2005, et seq.), which utilizes optimization toward the features of the meaning target (s-features) for allomorphy selection. She explores the consequences of OCM for a number of morphophonological phenomena, including suppletive allomorphy, morphological blocking, and multiple exponence effects. She shows that OCM makes differing predictions for locality conditions on allomorphy that is conditioned by arbitrary lexical properties of morphemes versus allomorphy that is conditioned by s-features.

1.3 On serialism versus parallelism

As noted in Nevins 2011, it is generally agreed that non-derivational, monostratal versions of Optimality Theory (OT; Prince & Smolensky 1993) are untenable because they lack the standard layering that serial systems use to account for the rich array of opaque phonological interactions attested cross-linguistically. Given this consensus, one aim of the workshop, and of many chapters in this collection, is to take the useful comparative discussion in Embick (2010) beyond the opposing perspectives of global OT and cyclic, rule-based phonology. A useful theoretical comparison is between the serial, derivational, rule-based system embodied by Distributed Morphology and the serial, derivational, constraint-based systems embodied by various instantiations of serial OT (e.g. Stratal OT, Kiparsky 2000, Bermúdez-Otero 1999; Cophonology Theory, Inkelas 1998; Harmonic Serialism, McCarthy 2008a, 2008b; OT-CC (OT with Candidate Chains), McCarthy 2007; Optimal Interleaving, Wolf 2008). These systems differ from each other along several parameters: for example, in the degree of locality imposed; in the violability of the imposed locality; and in the degree of specificity and articulation of what the output of (morpho)syntax should be.

Discussions of serial versus parallel and rule-based versus optimizing theoretical implementations are represented in this volume throughout many of the chapters. **Deal & Wolf** present a case of outward-sensitive phonologically conditioned suppletive allomorphy from Nez Perce, which supports the conclusion that morphological spell-out is neither purely serial nor purely parallel. Their argument is that some serialism is required to limit how many affixes a suppletive allomorph can be sensitive to,

and some parallelism is required to account for outward sensitivity. They conclude that the right formulation arises from incorporating cycles for delimiting domains—either in DM-based phase theory or in terms of Stratal OT. **Buckley**'s chapter provides a detailed comparison of the give and take among several theoretical approaches (including OT-CC, Stratal OT, Optimal Interleaving, Lexical Phonology, and DM) in accounting for challenging and complex Kashaya data. **Kiparsky**'s chapter compares Arregi & Nevins' (2012) prominent DM account of the Basque auxiliary system to a lexical Stratal OT account, arguing that a Stratal OT benefits from being able to integrate constraints directly into the computation of optimal candidates. This chapter in particular sparked productive debate at the workshop, and **Arregi & Nevins** have prepared a reply to **Kiparsky**, which is published herein.

I.4 On optimization

What are the underlying motivations for morphophonological operations? Two chapters in this volume take up this issue in the domain of phonologically conditioned suppletive allomorphy (PCSA). **Yu** argues that optimization (according to a set of OT constraints) is a necessary component of explaining certain types of PCSA. He considers two infixation cases in Katu (Mon-Khmer) and Tiene (Bantu), which suggest that localist subcategorization-based theories either miss generalizations in accounting for specific patterns or cannot account for those patterns at all. He argues that an optimization-based approach, which is able to specify global output well-formedness, instead is better suited to modeling the cases of suppletive alternation he examines.

Paster argues for the opposite position, providing motivations for a subcategorization analysis of PCSA over a constraint-based analysis. Using case studies from Mixtec and Pama-Nyungan, Paster demonstrates that phenomena of apparent phonological optimization in PCSA may arise from diachronic sources; and as such, their purported optimizing effects should not be attributed to the synchronic grammar. She concludes from these cases that PCSA is not synchronically natural or driven by markedness; and, taken together with previous defenses of subcategorization frames in morphophonology, this means that a phonologically optimizing approach to allomorphy selection is unnecessary.

I.5 On the accessibility of morphosyntactic and phonological information

Another major component in considerations of the morphosyntax-phonology interface is the extent to which each grammatical module accesses and influences the other: what

type of phonological information (if any) may motivate morphosyntactic behaviors? Although it is widely accepted that morphosyntax feeds phonology (e.g. Zwicky & Pullum 1986), the specific details of this relationship remain underdeveloped. One problem has been understanding the persistence of morphosyntactic information once the phonological portion of grammar has been reached. A variety of limitations on the availability of morphosyntactic detail have been hypothesized, and chapters in this volume represent a wide range of approaches. **Svenonius**, for example, maintains strict separation between syntactic information and phonological information in lexical entries of allomorphs. His approach is even more restrictive than, for example, DM, which permits contextual restrictions on exponents to refer both to syntactic and phonological information. Svenonius illustrates in his chapter how such an approach may be usefully applied in a comparative study of two groups of Norwegian dialects: one group with a three-gender system and the other group with a two-gender system. The relevant allomorph in these two groups, he argues, refers to a syntactically salient feature (gender) in the three-gender system, where semantic and morphological cues to syntactic information are abundant, but to a phonologically salient feature (declension) in the two-gender system, where syntactic information is not as readily deducible by learners.

Other chapters hone in on the idea that the availability of morphosyntactic information depends on cyclic domains in morphological or phonological structure, pulling evidence from inward- and outward-sensitive allomorphy (e.g. **Deal & Wolf**, **Inkelas**, **Gribanova & Harizanov**). In some cases, morphosyntactic detail has been shown to be relevant even at late stages of near-to-the-surface phonological patterns, suggesting that morphosyntactic and prosodic information are co-present to be referenced for surface phonology. **Anttila** develops an Optimality-Theoretic approach to variable auxiliary contraction in English, in which syntactic and prosodic constraints work in parallel to determine surface phonological variation. Whereas postlexical contraction has previously been shown to be determined by phrasal stress based on syntactic constituency (Chomsky & Halle 1968; Liberman & Prince 1977), Anttila's corpus-based results show that contraction is also affected by prosodic factors not tied to syntax, such as the degree of stress and syllable structure (see also Labov 1969). His conclusion is that both types of information—syntactic and phonological—are necessary for determining the observed variable surface patterns. **Zec & Filipović Đurđević** present a similar case from Serbian in which variable placement of second position clitics utilizes both prosodic and syntactic information. Through a series of experiments, they find that whether the sentence is predicate- or argument-initial significantly affects the placement of these clitics either after the first prosodic word or the first prosodic phrase. Hence, Zec & Filipović Đurđević and Anttila's results demonstrate that for certain phonological operations, information about the larger syntactic context must be accessible along with prosodic information at the postlexical level.

I.6 On phonological influences in morphosyntactic operations

The standing assumption about the interface is that the interaction of grammatical modules is primarily unidirectional. That is, derivations proceed from syntax to phonology but crucially not in the other direction (for proponents of this view, see, e.g. Zwicky & Pullum 1986; Vogel & Kenesei 1990). A consequence of this working assumption is that, until fairly recently, very few cases of phonological influence on syntactic operations have been documented or explored in the existing literature. Phonologically conditioned morphological alternations are strikingly more common by comparison, although still less so than morphologically conditioned phonology (e.g. Carstairs 1990).

This volume is unusual in presenting examinations of syntax-phonology and morphology-phonology interactions in tandem. Chapters in this volume demonstrate that the intersection between these three grammatical components is more fluid than previously held. The comparison of morpho-phonology and syntax-phonology phenomena reveals parallel cases where phonology exacts influences on both morphological and syntactic domains. In his chapter, **Adams** examines English comparative alternations, an empirical phenomenon that sits between morphological (i.e. synthetic) and syntactic (i.e. analytic) domains. He demonstrates that prosodic optimization in part drives the alternation between suffixation and the periphrastic comparative. Going one step beyond, he also argues that language use information—for example, word frequency—plays a role in determining adjectival prosodic structure, which feeds the periphrastic comparative alternation.

In her chapter, **Shih** argues that phonologically conditioned morphology has an analogy in larger domains, in phonologically conditioned syntactic phenomena. Shih's chapter presents a cross-linguistic comparison on phonologically conditioned morphological and syntactic behaviors as well as two specific case studies from corpus evidence in English. From these results, she concludes that the empirical differences between phonologically sensitive morphology and syntax may arise from general locality and domain differences rather than specific limitations in the grammatical architecture of the interface.

The connections between these chapters are numerous; they are structured here according to the domain of the discussion: with one section on interaction within words, one section on interactions between words, and one final section in which authors stake out a particular theoretical position. Throughout, we see roughly two modes of inquiry, sometimes overlapping: one approach (represented by the chapters of **Embick, Svenonius, Deal & Wolf, Gribanova & Harizanov, Buckley, Anttila, Shih**, and **Zec & Filipović Đurđević**) involves separating out the relevant questions and considering evidence in favor of or against particular views and across specific

theories. A second approach takes a given theory as a starting point and argues against or for it, sometimes pushing further into the details of a given theoretical approach (represented by the chapters of **Yu, Harley et al., Kiparsky, Arregi & Nevins, Adams, Inkelas**, and **Paster**).

Finally, in an afterword, **Sharon Inkelas** turns an eye toward how the investigation of the morphosyntax-phonology interface has developed over the last three decades of work. As with our workshop in 2012, it is evident from the chapters herein that future understanding of the phonology-morphosyntax connection is a task that will be best undertaken by bringing together researchers from numerous empirical and theoretical domains.

References

Arregi, Karlos & Andrew Nevins. 2012. *Morphotactics: Basque auxiliaries and the structure of spellout.* Dordrecht: Springer.

Bermúdez-Otero, Ricardo. 1999. Constraint interaction in language change: Quantity in English and Germanic. Manchester, England: University of Manchester dissertation.

Bye, Patrick & Peter Svenonius. 2012. Non-concatenative morphology as epiphenomenon. In Jochen Trommer (ed.), *The morphology and phonology of exponence*, 427–495. Oxford: Oxford University Press.

Caballero, Gabriela & Sharon Inkelas. 2013. Word construction: Tracing an optimal path through the lexicon. *Morphology* 23. 103–143.

Caha, Pavel. 2009. *The nanosyntax of case.* Tromsø, Norway: University of Tromsø dissertation.

Carstairs, Andrew. 1990. Phonologically conditioned suppletion. In Wolfgang U. Dressler, Hans C. Luschützky, Oskar E. Pfeiffer & John R. Rennison (eds.), *Contemporary morphology*, 17–23. Berlin: Mouton de Gruyter.

Chomsky, Noam & Morris Halle. 1968. *The sound pattern of English.* New York: Harper and Row.

Embick, David. 2010. Localism versus globalism in morphology and phonology. *Linguistic Inquiry monographs* 60. Cambridge, MA: MIT Press.

Embick, David & Morris Halle. 2005. On the status of stems in morphological theory. In Twan Geerts, Ivo van Ginneken & Haike Jacobs (eds.), *"Going Romance" 2003*, 37–62. Amsterdam and Philadelphia: John Benjamins Publishing Company.

Harley, Heidi. 2014. On the identity of roots. *Theoretical Linguistics* 40. 225–276.

Inkelas, Sharon. 1998. The theoretical status of morphologically conditioned phonology: A case study of dominance effects. In Geert Booij & Jaap van Marle (eds.), *Yearbook of morphology 1997*, 121–155. Dordrecht: Springer.

Inkelas, Sharon & Cheryl Zoll. 2005. *Reduplication: Doubling in morphology.* Cambridge, England: Cambridge University Press.

Kiparsky, Paul. 2000. Opacity and cyclicity. *The Linguistic Review* 17. 1–15.

Labov, William. 1969. Contraction, deletion, and inherent variability of the English copula. *Language* 45. 715–762.

Liberman, Mark & Alan Prince. 1977. On stress and linguistic rhythm. *Linguistic Inquiry* 8. 249–336.

McCarthy, John J. 2007. Slouching towards optimality: Coda reduction in OT-CC. *Phonological Studies* 7. 89–104.

McCarthy, John J. 2008a. The gradual path to cluster simplification. *Phonology* 25(2). 271–319.

McCarthy, John J. 2008b. The serial interaction of stress and syncope. *Natural Language & Linguistic Theory* 26(3). 499–546.

Merchant, Jason. 2015. How much context is enough? Two cases of span-conditioned stem allomorphy. *Linguistic Inquiry* 46(2). 273–303.

Nevins, Andrew. 2011. Phonologically conditioned allomorph selection. In Marc van Oostendorp, Colin J. Ewen, Elizabeth Hume & Keren Rice (eds.), *The Blackwell companion to phonology*, vol. IV, 2357–2382. Malden, MA and Oxford, England: Blackwell Publishing.

Prince, Alan & Paul Smolensky. 1993. *Optimality Theory: Constraint interaction in generative grammar* (RuCCS Technical Report 2). Piscataway, NJ: Rutgers University Center for Cognitive Science, Rutgers University.

Starke, Michal. 2009. Nanosyntax: A short primer to a new approach to language. In Peter Svenonius, Gillian Ramchand, Michal Starke & Knut Tarald Taraldsen (eds.), *Nordlyd* (Special issue on nanosyntax) 36(1). 1–6. Tromsø, CASTL.

Vogel, Irene & Istvan Kenesei. 1990. Syntax and semantics in phonology. In Sharon Inkelas & Draga Zec (eds.), *The phonology-syntax connection*, 339–364. Chicago: University of Chicago Press.

Wolf, Matthew. 2008. *Optimal interleaving: Serial phonology-morphology interaction in a constraint-based model.* Amherst, MA: University of Massachusetts Amherst dissertation.

Zwicky, Arnold M. & Geoffrey Pullum. 1986. The principle of phonology-free syntax: Introductory remarks. *Interfaces* 2. 63–91. Columbus, OH: Ohio State University Working Papers in Linguistics.

THE MORPHOSYNTAX-PHONOLOGY CONNECTION

CONTENTS

PART THREE: *Theoretical Developments at the Morphosyntax-Phonology Interface*

THE MORPHOSYNTAX-PHONOLOGY INTERFACE WITHIN WORDS