

Research Statement

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Phonological theory aims to characterize sound patterns across languages. Much of the goal of my current and planned research is to provide a principled explanation for sound patterns using the relatively new framework called Optimality Theory. The primary areas of my work include the study of the role for contrast, lexical phonology, and phonology-morphology interface. In the past, I have also done research in formal semantics where I have published work on reflexivity. My research is often informed by evidence from Slavic languages.

One of my core areas of interest is the study of contrast. Contrast is a central element of a phonological system. It allows us to distinguish words that could be pronounced the same, such as *pin* and *pen* in some dialects of American English. The key issue is to determine where contrast fits into the grammar. The main debate is whether contrast is a derivative in the phonological system or whether it exists as an imperative. In my dissertation and post-doctoral work, I propose that contrast exists as a separate principle in the grammar and develop a formal account of contrast within the framework of Optimality Theory. I propose that contrast is formulated as a family of rankable and violable constraints on preserving contrasts, called PC constraints. PC constraints interact with each other and with conflicting markedness constraints, resulting in preserving or neutralizing underlying distinctions in surface forms. There are two important implications of this proposal. First, it predicts that phonological mappings must be evaluated together as a system rather than in isolation as in standard Optimality Theory. Second, it makes a prediction as to what a possible phonological mapping is. Since mappings are evaluated together, under this proposal a phonological mapping can be a result of contrast preservation. Unlike previous accounts of phonology, it admits push shift mappings where a mapping takes place solely to preserve contrast. In this area, I have done research in the role for contrast in chain shift mappings, counter-feeding opacity, and stress-epenthesis interaction. This research includes my dissertation ([1]), a post-doctoral WCCFL paper on counter-feeding opacity as a chain shift effect ([2]), an article under revisions on stress-epenthesis interaction in Arabic ([4]), and an unpublished manuscript on the role for contrast in chain shifts ([5]). To solidify my research on contrast, I am currently writing a monograph on *The Phonology of Contrast* ([7]) under contract with Equinox Publishers.

My research on contrast also has implications for our understanding of morphological alternations. I am currently investigating the role for contrast in the process of opaque allomorphy. An example of allomorphy is the plural suffix in English which has three allomorphs: [-s] as in *cats*, [-z] as in *dogs* and [-ɪz] as in *houses*. The goal is to determine how the allomorphs are distributed. In my paper on opaque allomorphy in Polish ([6]) published in the *Journal of Slavic Linguistics: Special Volume on Phonology* and in a recent WCCFL paper ([3]), I develop a theory of opaque allomorphy in Polish declension patterns in terms of preserving contrasts. I propose that allomorphs are chosen to indicate contrasts that would be otherwise neutralized in surface forms due to a regular phonological process. This study contributes to the growing interest in the role for contrast in phonology-morphology interaction. I have also investigated the process of nickname formation in Polish as allomorph selection ([16]). This project was supported by two Undergraduate Research Grants awarded from the College.

My interest in phonology-morphology interface stems from my long-term interest in lexical phonology. In this area, I have developed a theory of phonologically- and morphologically-derived environment effects using the principle of local constraint conjunction. The core idea is that a faithfulness constraint is activated by a violation of a markedness constraint in a local domain. This paper was published in *Lingua* ([8]) and a shorter version appears in *WCCFL Proceedings* ([9]). It is also reprinted in a volume edited by Cambridge University Press which includes recent developments in phonology in *Optimality Theory* ([10]). The proposal I have developed paved the road for many subsequent developments in the field, including that of comparative markedness. I have further discussed the local conjunction analysis in an article published in *Theoretical Linguistics* ([11]) where I extend it to chain shifts and compare its predictions with that of comparative markedness. I have also further developed the local conjunction proposal in a recent *WCCFL* paper ([12]) where I give an analysis of an unfaithful mapping incorporating recent developments in phonological theory. The main idea is that the domain for local conjunction can be formalized in terms of the locus of violation for constraints.

A significant part of my research deals with the question of how to explain why certain phonological processes apply only in particular morphological categories or contexts, and how to represent the relation between phonology and morphology. Most recently, I addressed this question in my work on infixation as morpheme absorption ([13]). In this paper, I study the interaction of affixation and feature cooccurrence restrictions. I discuss cases where segmentally-identical infixes and prefixes respond differently to feature cooccurrence restrictions on the root domain (OCP). Infixes are subject to OCP while prefixes are not. To explain the asymmetry between identical prefixes and infixes, I propose that infixes are part of the root morpheme in the output while prefixes are outside of the root domain. Infixes become part of the output root morpheme via a process of what I call morpheme absorption. This proposal also explains cases where an infix becomes a prefix to avoid morpheme absorption and consequential violation of feature cooccurrence restrictions. This paper is accepted for publication in a refereed book. I have also written a review of Alan Yu's *A Natural History of Infixation* for *Journal of Linguistics* ([14]).

I have a strong interest in various aspects of Polish grammar as shown by my publications, including work on contrast ([7]), derived environment effects ([8]), reflexives ([15]), nickname formation ([16]), and an upcoming book review of Gussmann's *The Phonology of Polish* in *Phonology* ([17]).

My research has made an important contribution to our understanding of phonological mappings and the interaction between phonology and morphology. I have published in the areas of chain shifts, derived environment effects, opaque allomorphy, and infixation. A defining theme of my work is the study of various aspects of Slavic languages, especially Polish. Over the next two years I plan to continue this line of research with particular emphasis on morphological contrast.

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