Categorical and gradient dimensions of stress in English compounds

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Introduction

• Compositionality Degree that the meaning of a compound is the sum of its parts (e.g. humbug vs. blueberry)

• Standard assumption: Highly opaque compounds listed in the lexicon and highly transparent compounds produced online (Kiparsky, 1982)

Prior Work

• Opaque/transparent and reduced/unreduced shown to be gradient in naturalistic corpus data (Davis and Cohn, 2019)

• Moreover, these effects are correlated (and distinct from other factors commonly associated with reduction, i.e. frequency)

• Is this evidence for gradient phonology? Is this gradient manifested as gradient well-formedness (Cohn 2006)?

Research Questions

• Are the lexical representations of compounds homogenous?

• What is the relationship between gradient phonological reduction and the perception of compound stress?

Hypothesis

• Gradient phonological reduction in compound heads will be perceived categorically relative to higher level prosodic organization (i.e. stress)

Data

• 248 words from Boston University Radio News Corpus (Ostendorf et. al. 1995)

• 133 bisyllabic nominal compounds including tax plan, bathroom, chairman

• Fillers - 2 or 3 syllables with initial, medial, or final (citation) stress including restaurant, official, result

• 14 listeners asked to assign no stress, secondary stress, or primary stress to each syllable

Measures

• Calculate consistency of judgements using Fleiss’s kappa

• Duration of compound head minus monomorphemic word (e.g. relativized distance from primary stress)

Stress Rating Results

• The no stress rating is overwhelmingly preferred to secondary stress

• Secondary stress is never rated above chance

• Duration is significant predictor of assigned stress level

Implications

• Raters make use of end points of ratings (no stress vs. primary stress) suggesting differing but categorical lexical representations (cf. Compound Stress Rule)

• What gradient phonetic cues do higher levels of grammatical organization have access to (Pierrehumbert, 2002; Hay, 2004; Ladd, 2006)?

• A reanalysis or reorganization of lexical items suggesting an anti-Paradigm Uniformity effect, where compound heads are distanced from monomorphic forms (cf. Steriade, 2000)

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Selected References

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