

University of California, Santa Barbara

Lexical flexibility in discourse:
A quantitative corpus-based approach

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of
Philosophy in Linguistics

by

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June 2020

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The source code, data, and accompanying scripts for this thesis are available on GitHub:

<https://github.com/dwhieb/dissertation>

Dedication

ACKNOWLEDGMENTS

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ABSTRACT

Lexical flexibility in discourse:
A quantitative corpus-based approach
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This thesis is a quantitative corpus-based study of lexical flexibility in English (Indo-European) and Nuuchahnulth (Wakashan). *Lexical flexibility* is the capacity of lexical items to serve in more than one discourse function—reference, predication, or modification (or more traditionally, noun, verb, or adjective). In this thesis I develop a procedure and metric for quantifying the lexical flexibility of words in a corpus, and apply that metric to English and Nuuchahnulth. I find that the two languages differ drastically in not only their degree of lexical flexibility, but the way in which that flexibility is realized. This study advances the discussion of lexical flexibility—as well as parts of speech more generally—by adding a new kind of empirical evidence to the discussion (quantitative corpus-based data), and in doing so provides answers to several longstanding and much-debated questions about how lexical categories operate in English and Nuuchahnulth.

The abstract should include 1) a brief statement of the problem; 2) a description of the methods and procedures used to gather data or study the problem; 3) a condensed summary of the findings. The abstract should be double-spaced. The recommended length is 1–2 pages. (add Abstract)

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List of Abbreviations

The following table provides the meaning of each abbreviation used in interlinear glossed examples throughout this thesis.

1	first person
2	second person
3	third person
SUBJ	subject

Conventions

This note documents the conventions I have adopted regarding linguistic data, terminology, and presentation of data throughout this thesis.

It is well known that the world's languages realize widely different sets of morphosyntactic categories (Whaley 1997: 58; Haspelmath 2007). Moreover, even when these categories bear the same name, they may differ drastically in their behavior (Dixon 2010: 9). It is the subject of much debate whether these language-specific categories can be mapped onto each other or compared in any useful way (Croft 1995; Song 2001: 10–15; Croft 2003: 13–19; Haspelmath 2010a,b; Newmeyer 2010; Stassen 2011; Hieber 2013: 308–310; Croft 2014; Plank 2016; Song 2018: 44–58). Recognizing these difficulties, I have made no attempt to standardize the linguistic terminology used in examples from different languages. I have, however, standardized the abbreviations used to refer to those terms. For example, even though one researcher may abbreviate Subject as SUBJ and another researcher abbreviate it as SUB, I nonetheless gloss all Subject morphemes as SUBJ. See the [List of Abbreviations](#) (p. xii) for a complete list of glossing abbreviations.

I have not attempted to standardize the transcription systems and orthographies used in examples. All examples are given as transcribed in their original source. The reader should consult those original sources for further details regarding orthography.

The source of each example is always provided after the example itself.

In all interlinear glossed examples, I follow the formatting conventions (but not necessarily the recommended abbreviations) of the Leipzig Glossing Rules (Bickel, Comrie & Haspel-

math 2015).

It is increasingly common in typological studies to write language-particular terms and categories with an initial capital letter, and to write terms that refer to language-general or semantic/functional concepts (e.g. the crosslinguistic notion of subject) in lowercase (Comrie 1976: 10; Bybee 1985: 47 (fn. 3), 141; Croft 2000: 66; Haspelmath 2010a: 674; Croft 2014: 535). For example, the English Participle suffix *-ing* is, obviously, specific to English, and does not exist in any other language; therefore it is capitalized and written as *Participle*. If, however, a writer is discussing the category of participles generally and crosslinguistically, not specific to any particular languages, the term is written in lowercase as *participle*. I follow these same capitalization conventions in this thesis.

The first mention of a language within each chapter is followed by its genealogical affiliation (following the format family > phylum) and the location where it is spoken. For example, Central Alaskan Yup'ik would appear as “Central Alaskan Yup'ik (Eskimo-Aleut > Eskimo; Alaska)”. Language information is taken from the Glottolog database (Hammarström, Forkel & Haspelmath 2019). Language names are given in English following Haspelmath (2017). A complete list of languages mentioned in this thesis, along with their ISO 639-3 codes and Glottolog codes, is in the [List of Languages](#).

Within quotations, *italics* indicates emphasis in the original, while **boldface** indicates my emphasis.

After each graphical representation of data, I have included the file path within the accompanying GitHub repository for this thesis to the script which will generate that figure.

Chapter 1

Introduction

This chapter motivates the need for research on lexical flexibility by situating it within broader concerns regarding linguistic categories more generally, and categories in human cognition. The specific problem that this study seeks to address is our lack of understanding regarding what lexical flexibility looks like, and how it varies across languages. This thesis contributes to answering these questions via a quantitative corpus-based study of lexical flexibility in English (Indo-European) and Nuuchahnulth (Wakashan). It is the first study to examine lexical flexibility using natural discourse from corpus data. This chapter provides an overview of the thesis, including the specific research questions addressed, the data and methods used, a concise summary of the results, and a preview of the conclusions.

Word classes such as noun, verb, and adjective (traditionally called *parts of speech*) were once thought to be universal, easily identifiable, and easily understood. Today they are one of the most controversial and least understood aspects of language. While language scientists generally agree that word classes exist, there is much disagreement as to whether they are categories of individual languages, categories of language generally, categories of human cognition, categories of language science, or some combination of these possibilities (CITE: Mithun 2017: 166; Haspelmath 2018; Hieber forthcoming: 1). Lexical categorization—how languages separate words into categories—is of central importance to theories of language because it is tightly interconnected with linguistic categorization generally, which in turn informs (and is informed by) our understanding of cognition. Categorization is a fundamental

feature of human cognition (CITE: Taylor 2003: xi), and lexical categorization is perhaps the most foundational issue in linguistic theory (CITE: Croft 1991: 36; Vapnarsky & Veneziano 2017: 1).

One challenge for traditional theories of word classes is the existence of *lexical flexibility*—the use of a word in more than one discourse function, whether to refer (as a noun), to predicate (as a verb), or to modify (as an adjective). In traditional terms, flexible words are those which may be used for more than one part of speech. (A more precise definition of lexical flexibility is given in Chapter 2.) Examples of flexible words in several languages are shown below.

Give examples here. Discuss all the examples together in the lead out. Examples: English; Nuuchahnulth: Kingfisher 202

Flexible words like those in the examples above create an analytical problem for traditional theories of parts of speech. Traditional theories assume that words can be partitioned into mutually exclusive categories on the basis of a clear set of criteria, an approach that has its roots in the Aristotelian tradition of defining a category via its necessary and sufficient conditions. Flexible words would seem to violate this assumption because they appear to be members of more than one category at once, and the criteria for classification yield conflicting results.

Researchers have proposed numerous solutions to this problem. The most common response is to adjust the selectional criteria so that only certain features are considered definitional of the class, allowing these researchers to dismiss other, potentially contradictory evidence as irrelevant (CITE: Baker 2003; Dixon 2004; Floyd 2011 for Quechua; Chung 2012 for Chamorro; Palmer 2017). It is also common to analyze different uses of a putatively flexible word as instances of *heterosemy*—that is, entirely distinct words which share the same form but belong to different word classes (CITE: Lichtenberk 1991). In this view, heterosemous words are related only historically, via a process of conversion or functional shift, in essence denying the existence of lexical flexibility (CITE: Evans & Osada 2005). Another approach

is to claim that, while all words can be neatly categorized, some words in some languages may nonetheless be used for functions typically associated with other categories. A notable example of this is Launey's (CITE: 1994?, 2001?) analysis of Classical Nahuatl, which he calls an *omnipredicative* language. In this analysis, Classical Nahuatl has the traditional, clearly-delineated word classes of noun and verb, but allows for any word to function as a verb regardless of its category (hence the term *omnipredicative*). The reverse is not true however; only some verbs may function as nouns. This difference in behavior is taken as the basis for a categorical¹ distinction between nouns and verbs.

Some researchers enthusiastically embrace the existence of lexical flexibility and abandon a commitment to the traditional categories of noun, verb, and adjective. Instead they analyze flexible lexemes as belonging to a broader, flexible word classes such as “flexibles”, “contentives” or “non-verbs”, etc. (CITE: Hengeveld & Rijkhoff 2005; Luuk 2010?). Other researchers abandon the commitment to word classes entirely. Mandarin, Tagalog, Tongan, and Riau Indonesian have each been analyzed as lacking parts of speech (CITE: Simon [1937], McDonald [2013], and Sun [2020] for discussions of early analyses of Mandarin; Gil [XXXX] for Tagalog; Broschart [XXXX] for Tongan; Gil [XXXX] for Riau Indonesian). Within generative linguistics, the Distributed Morphology framework takes it as an assumption that all word roots are category-neutral (CITE: Siddiqi 2018).

Note that these differences in perspective do not arise from disagreements about the empirical facts of each language. Researchers mostly agree on the empirical data, but disagree on the relative importance of various pieces of evidence, and on which criteria should be taken as diagnostic of a category (CITE: Croft & van Lier 2012: 58). It is rare that an argument for flexibility is refuted on the basis of the linguistic facts alone (CITE: cite Mithun's response to Sasse's analysis of Cayuga as a flexible language).

Since analyses of lexical flexibility depend more on the particular theoretical commitments of the researchers involved rather than any particular crucial pieces of evidence, this leads

¹Throughout this thesis, I use the term *categorical* to mean ‘without exception; unconditional’ and the term *category* to mean ‘having to do with categories’.

Make sure that this is an accurate description of the empirical facts of Classical Nahuatl.

Add example from Stassen [1997: 32] about two researchers coming to different conclusions about Sudanese. Also the example of Quechua or perhaps Iroquoian (Chafe). Also Mundari.

to an intractable problem: researchers cannot agree on the criteria that should be considered diagnostic for a given category in a specific language (let alone crosslinguistically). Instead they partake in *methodological opportunism* (CITE: Croft 2003?: ??), choosing the evidence and criteria which best support their theoretical commitments. Discussions in the literature about the existence of a particular category in a particular language are therefore often unproductive, and devolve into debates about theoretical assumptions or the relevance or importance of various pieces of evidence, which are ultimately unresolvable (CITE: Croft 2005: 435).

This is particularly unfortunate because lexical flexibility is by no means an isolated or minor problem. Additional examples like those above could be provided for many or perhaps even all of the world's languages. Lexical flexibility is not as rare or marginal as traditional approaches to word classes lead one to believe. In a survey of word classes in 48 indigenous North American languages (CITE: Hieber forthcoming), every one of the languages surveyed exhibited lexical flexibility in at least some area of the grammar (although not all authors analyzed these cases as such). In my own experience researching lexical flexibility over the last decade, I have yet to encounter a language that does not exhibit a degree of flexibility in at least some words, however marginally. The prevalence with which different areas of the grammars of the world's languages lack sensitivity to the distinctions between reference (nouns), predication (verbs), and modification (adjectives) suggests that lexical flexibility may not be so much of a problem as it is a design feature of language (CITE: Hieber forthcoming). Indeed, as discussed in [Chapter 2](#), existing research shows that lexical flexibility is constrained and shaped by the very principles that give rise to the crosslinguistic categories of noun, verb, and adjective in the first place (CITE: Croft 2000; Croft 2005; Croft & van Lier 2012).

Chapter 2

Background

Chapter 3

Data & Methods

Chapter 4

Results

Chapter 5

Conclusion

References

SOURCES OF LITERATURE

The references listed in this section are literature on the topic of this thesis that have been cited in the text.

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