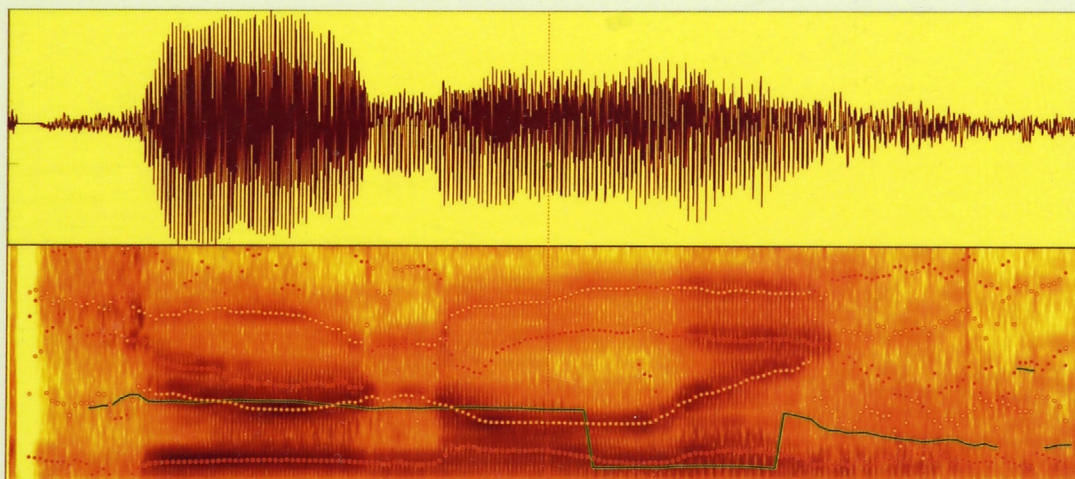


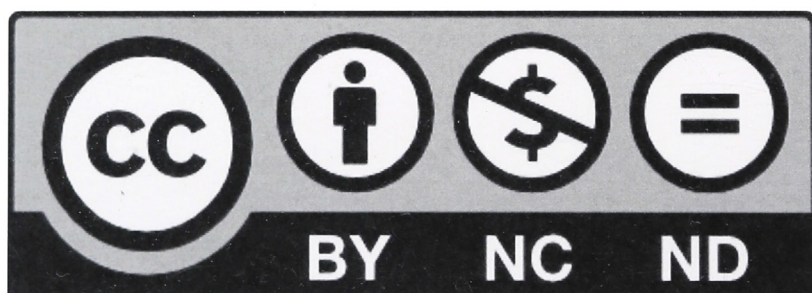
JournalLing

Undergraduate Linguistics Journal



Volume II | 2023

JournalLing is based in Montreal, which is situated on the traditional unceded territory of the Kanien'kehà:ka, a place which has long served as a site of meeting and exchange amongst nations. JournalLing recognizes and respects the Kanien'kehà:ka as the traditional custodians of the lands and waters on which our journal operates.



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Foreword..... 5

Language Colors Our World: A Summary of the Use of Color in the Study of Linguistic Relativity..... 6

 Anna de la Fuente

Predictors of Success for Language Revitalization: Institutions, Education, and the Internet..... 13

 Jinny Choi

A Comparison of Canadian and British English Through Newspapers..... 19

 Alison Yu

Do I Talk Funny?: An acoustic analysis of Vancouver Island, Metro Vancouver, and Chicagoland English..... 28

 Ella Brown, Anna Ketch, Jackson Harris

The Grammaticalization of Motion Verbs into Directionals in Chol..... 37

 Marie-Sophie Aubé

On Topics in Itzaj..... 44

 Alison Yu

An Overview of Number Suppletion in the Na-Dené Family..... 51

 Anna de la Fuente

Transitivity-aspect interactions in Igbo: a view from event delimitation..... 60

 Zahur Ashrafuzzaman

The 2022-2023 JournalLing Team

Co-lead Editors:

Julia Genberg

Chris Samojedny

Editors:

Isabella Santiago

Alli McFarlane

Dixuan Gong

Chloe Bugat

Layout Editor:

Julia Genberg

Graphic Designer:

Marie-Sophie Aubé

Foreword

The title of our first paper says it best: language colors our world. From the remote valleys of Papua New Guinea to the sprawling plains of Africa, language is omnipresent and functions as our most crucial tool, allowing us to communicate and connect with one another. Therefore, it is only natural that a whole field of study is dedicated to this pervasive entity.

Since linguistics is a relatively novel field of study, new discoveries continue to severely alter our perspectives on language and its relationship with society. Moreover, publication opportunities in this field for undergraduate students are sparse. However, with the establishment of this journal, McGill's *linguists-in-training* are able to showcase their various talents in the numerous subfields of linguistics.

While this issue marks *JournalLing*'s first publication in three years due to the COVID-19 pandemic, it encompasses a wide variety of research and literature reviews that indicate the tenacity and determination present in our linguistics department. Bright ideas and careful analysis are demonstrated throughout this journal, representing who and what are the future of such an important social science.

After a lot of hard work, the editors of *JournalLing* have created a finished project of which we are very proud. Together, our team carefully selected eight papers that represent the elusive, ever-changing, and breathtaking beauty of language through careful analysis of its various domains from syntax to sociolinguistics to phonetics. Within these 75 pages are writings that could one day alter the way in which one sees language, and perhaps after perusing this journal, your view will be altered, and you will begin to see language as this beautiful living being that colors our world.

Language Colors Our World: A Summary of the Use of Color in the Study of Linguistic Relativity

Anna de la Fuente

Department of Linguistics, McGill University
LING 320: Introduction to Sociolinguistics
Professor Charles Boberg

Abstract

Linguistic relativity, a complex and hotly debated topic in the linguistics community, has been controversial since it was spotlighted by Benjamin Lee Whorf in the 1930s. Color is often used as a tool to prove or disprove linguistic determinism; this paper discusses the history of color in the Whorfian hypothesis and in linguistic relativity as a whole and presents and analyzes the findings of particularly important studies, including those by pioneering linguist Benjamin Lee Whorf, Brent Berlin and Paul Kay, and Paul Brown and Eric Lenneberg. Finally, this information will be synthesized to determine to what extent language affects color perception, in the author's opinion.

1 Introduction

Linguistic relativity, a complex and hotly debated topic in the linguistics community, has been controversial since it was spotlighted by Benjamin Lee Whorf in the 1930s. Color is often used to prove or disprove linguistic determinism. Eric Lenneberg and Roger Brown's benchmark study in 1954 used the Munsell color chips to assess Whorf's hypothesis. They theorized that color is both easy to quantify and is part of the human experience - an experience that exists regardless of and independent from the language one speaks. This paper discusses the history of color in the Whorfian hypothesis and in linguistic relativity as a whole and presents and analyzes the findings of particularly important studies, including those by pioneering linguist Benjamin Lee Whorf, Brent Berlin and Paul Kay, and Paul Brown and Eric Lenneberg. Finally, I synthesize the information presented in these studies and attempt to determine with which of the popular hypotheses I agree and to what extent, in my opinion, language affects color perception.

2 Background

The theory of linguistic relativity, that is, the idea that a language somehow affects how its speakers view the world, was popularized in the 1930s by American linguist Benjamin Lee Whorf, a student of Edward Sapir. This theory was dubbed the Sapir-Whorf hypothesis, despite the fact that Sapir and Whorf never wrote any papers together. While Edward Sapir acknowledged a connection between language and worldview, his work sometimes indicates a rejection of the stronger deterministic theory. In his 1946 paper *American Indian Grammatical Categories*, Sapir writes, "It would be naïve to imagine that any analysis of experience is dependent on patterns expressed in language" (Sapir & Swadesh, 1946, p. 111).

Moreover, the theory of linguistic relativity did not originate with Sapir or Whorf. The concept of a connection between language and thought is an old idea (and consequently, an old debate involving competing positions) traced back to the ancient Greek philosophers. The sophist Gorgias of Leontini claimed that the world could not be experienced except through language (Higgins), while Plato argued that the world is made up of eternal ideas, and language is merely a reflection of those ideas (Demos, 1964). The German Romantic philosophers would further explore this idea of a connection between language and thought in the 18th and 19th centuries. Wilhelm von Humboldt would claim that language and thought must be irrevocably intertwined since thoughts cannot be produced without language; that is, thoughts are produced as an internal dialogue in the

speaker's native language and grammar, and one cannot exist without the other. He also believed that language produces an individual's worldview through its particular grammatical constructions, such as its syntactic models and its lexical categories, and then went further to say that since cultures are made up of individuals who speak the same language, then a language must encapsulate the worldview of an entire culture (Kahane & Kahane, 1983). Franz Boas, American anthropologist, ethnographer, and Edward Sapir's teacher, imported this German idea of *Völkerpsychologie*, or the psychology behind cultural products such as language, religion, and mythology, to the United States in the early 20th century.

Over the past century, this ongoing linguistic debate has largely taken two forms: the strong hypothesis and the weak hypothesis. The strong hypothesis, also called linguistic determinism, states that a language determines how its speakers see the world. First proposed by Whorf in his paper *Science and Linguistics*, published in 1940, it was widely accepted before being rejected just as quickly in light of arguments against it proposed in the 1950s and 1960s when American linguist and father of modern linguistics Noam Chomsky spotlighted the universality of human language and cognition in his theory of universal grammar.

The weak hypothesis, a far more popular theory at the time the paper was written, takes a far less decisive stance and claims that while language does influence the way that its speakers see the world, it is by no means exhaustively determinative. Other cultural factors must be considered, as must the restraints imposed by human biology.

Both of these theories are difficult to definitively prove or disprove for many reasons. First, it is impossible to see the world through the eyes of another human being. Second, it is impossible (or at least extremely difficult) to understand how a language affects worldview if one is not a native speaker of that language. The task of deriving a study that would prove or disprove Whorf's hypothesis was difficult. Given these challenges, it was necessary to find something that was a fundamental part of human existence and could represent worldview but was also easy to measure and quantify.

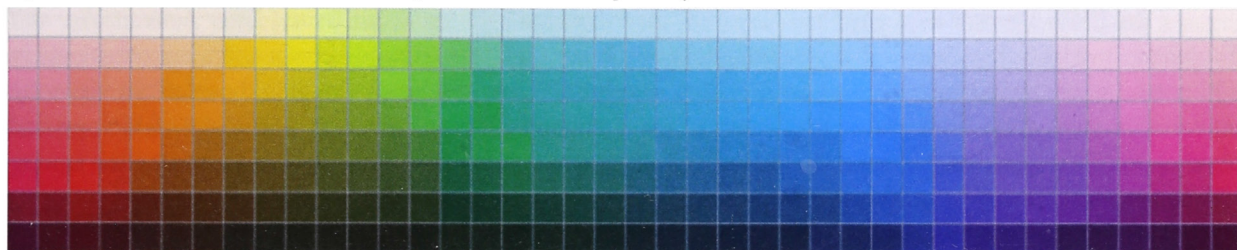


Figure 1: 330 color swatches from the Munsell color system (Jraissati & Douven, 2018). Note how hue changes on the x-axis and value changes on the y-axis.

Researchers could use Munsell color chips, swatches of color classified based on their hue, chroma, and value, as an independent variable, and speakers of different languages as their dependent variable in an attempt to determine if the language a person speaks affects the way they perceive and recall the color swatches presented to them. Thus, color was the obvious choice.

3 Previous studies

The first study to be examined is Whorf's foundational essay *Science and Linguistics*, published in 1940. This study had little to do with color, and more to do with kickstarting the discussion and debate surrounding linguistic relativity in the 20th century. In this essay, Whorf claimed that speakers of different languages were cognitively different from one another and that he had discovered a "new principle of relativity, which holds that all observers are not led by the same physical evidence to the same picture of the universe unless their linguistic backgrounds are similar" (Whorf, 1940, p. 7). He claimed he could prove his conjecture via examination of Hopi, a Uto-Aztecan language spoken in northeastern Arizona. The Hopi language, claimed Whorf, has no concept of time whatsoever. It has no word to describe the noun "time," and no grammatical constructions to indicate the past or future. Since their language was supposedly void of any concept of time, Whorf concluded that the Hopi people could not conceive of time in the same way a speaker of a language like French, English, or German (languages that Whorf categorized as "standard average European," or "SAE,") does. The Hopi people must experience reality in a totally different, timeless way.

This theory captured the minds of linguists from its publication onward. The idea that there may be as many different worldviews as there are languages spoken was an intriguing one and attempts to prove or disprove it came shortly after the essay's publication.

One of the first studies to employ color as a means of studying the way that language affects general worldview was undertaken in 1953 by Eric Lenneberg. In his paper *The Denotata of Color Terms*, he examined speakers of the Zuni language, a language isolate spoken in New Mexico and Arizona. Zuni has only one word to refer to the colors that English speakers refer to as yellow and orange. Lenneberg tested color recall in his subjects by “[Showing the subjects] some colors for a second and then, after half a minute, they were required to pick out the colors they had been shown from a large chart containing 250 colors, systematically arranged” (Lenneberg, 1955). Zuni speakers had great difficulty recalling and naming the colors that English speakers call yellow and orange. Lenneberg credits this difficulty to linguistic codability, or whether it is difficult or not to name an object. Since English speakers have terms to distinguish yellow and orange, it is easy for them to put a name to the difference between the two colors. However, in a language without that linguistic distinction, it is impossible to describe the difference one sees between yellow and orange, even if the subject is visually aware of it. This study would also begin a tradition of investigating linguistic relativity through color terminology.

Eric Lenneberg would later team up with Robert Brown to write the 1954 paper *A Study in Language and Cognition*, where they further explored the consequences of linguistic codability on color recall, this time testing English speakers in a similar manner to the Zuni speakers in Lenneberg's 1953 study. Their findings confirmed that the presence of a basic color term in a language directly affects the retention of the color in the memory recall test. If English had a clear color term for the color the speakers were to recall, the recollection came easily. But if the color the speakers were to name had no clear color term in English, naming it became far more difficult, proving that the presence or absence of a color term in a language affects, at the very least, the speaker's ability to discuss that term.

In 1969, Brent Berlin and Paul Kay published their book *Basic Color Terms: Their Universality and Evolution*, in which they argued that perception of color is not, in fact, a cultural phenomenon, but one innate in all humans regardless of language and culture. This introduced a new counterargument to the relativist view: the universalist view. This view states that color is not a cultural phenomenon, but a product of biology and psychology. They claimed that since the biology of all human beings is the same, that color perception among all humans must thereby be universally constrained.

Berlin and Kay's study found that there is a restriction on the number of basic color terms, or BCTs, that a language can have – the maximum number is eleven color terms, (though some argue that Russian has a twelfth term.) Basic color terms must be monolexic (e.g., “green,” not “yellow-green”), and monomorphemic (e.g., not “greenish”). Their significations must not be included in another color term (e.g., not “emerald”), and their use must not be restricted to a certain class of objects (e.g., “brunette” can only describe brown hair.) Finally, they must be psychologically salient for all speakers (e.g., not “the color of the tablecloth we use at Easter”) (Berlin & Kay, 1969).

They also claimed that there is an order in which colors appear in a language. Their findings were as follows:

- 1.) Every language has at least two BCTs: black and white, or, alternately, light and dark.
- 2.) If a language has a third color term, it will be red.
- 3.) If a language has a fourth color term, it will be either green or yellow, in no particular order.
- 4.) If a language has a fifth color term, it will be either green or yellow; whichever of those it is missing.
- 5.) If a language has a sixth color term, it will be blue.
- 6.) If a language has a seventh color term, it will be brown.
- 7.) If a language has eight or more color terms, they will be purple, pink, orange, or gray, in no particular order. (Berlin & Kay, 1969).

Finally, and perhaps most importantly, they found that BCTs in all languages respond to very similar shades of Munsell color chips, which indicates that the perception of these BCTs is roughly the same cross-linguistically.

Berlin and Kay's study effectively tore down the argument that color perception (and with it, worldview) varies wildly cross-linguistically. If color perception had indeed varied as Whorf had predicted it would, then basic color terms likely would not exist at all, as the diversity of worldviews would not lend themselves to having such uniform and consistent terms.

Later universalist studies include one from 1976 by Kessen, Bornstein, and Weiskopf, in which they exposed four-month-old infants to different frequencies of light that corresponded to different colors. In their subsequent paper *Color vision and hue categorization in young human infants*, the researchers noted that the length of habituation, or the decrease of a response to a stimulus due to repeated interaction with said stimulus, was longer when the infants were exposed to different hues surrounding a focal color (e.g., different shades of green) than when they were exposed to several focal colors (green, blue, yellow, etc.) in succession (Bornstein & Kessen & Weiskopf, 1976). This was strong evidence to confirm Berlin and Kay's hypothesis that color is innate and not a product of a worldview produced by language, as these infants had not yet acquired language, yet they still responded in the way that adults do to different hues and focal colors. Thus, Kessen, Bornstein, and Weiskopf were able to argue that the ability to perceive focal colors is an ability present even in babies who have no language to shape the way they view the world. At the very least, color (and consequently worldview) cannot be determined *solely* by language.

Berlin and Kay's study would be criticized by Barbara Saunders in her 2000 paper *Revisiting Basic Color Terms*, in which she claims that Berlin and Kay make several assumptions that diminish the quality of their research, including an ethnocentric bias towards Western philosophy and scientific thought, and poor, over-generalized translations of basic color terms from other languages (Saunders, 2000). She also criticized the general use of Munsell color chips and their effectiveness in the recall of color terminology and identification of focal hues, as she believes that the use of the Munsell color system is an example of one of social research's most common follies: the assumption that the real world and its nuances can somehow be replicated in data sets. The way humans perceive colors in the world cannot be distilled to a color system that fits neatly on a page, researchers cannot accurately gauge to what degree language affects a speaker's worldview, and perception of color cannot be determined in a lab. The way that humans naturally discuss color must be examined in the context of the wider world, not a set of colored cards.

4 Discussion

Therefore, which theory is correct? It is not as simple as proclaiming that one idea is entirely right or entirely wrong. Whorf's wholesale idea that language must be the sole thing that influences the way that humans see the world is inherently flawed, but so is the idea that human biology is the only thing that influences color perception.

Whorf's hypothesis, though fascinating to consider, can be disproven. First, it does not account for translatability. If every language encoded a completely different worldview and reality, it would be impossible to translate one language to another, yet this is something that human beings do daily. Second, Whorf's argument was centered around the Hopi language and its supposed lack of concept of time, but in his 1983 book *Hopi Time: A Linguistic Analysis of the Temporal Concepts in the Hopi Language*, Ekkehart Malotki successfully refuted the belief that Hopi has no concept of time. The Hopi language does, in fact, have many words and grammatical constructions for temporal relations, but unlike English, which differentiates between past and non-past, Hopi differentiates between future and non-future (Malotki, 1983). This discovery was a devastating blow to Whorf's theory.

Linguists generally agree that a deterministic approach to linguistic relativity is wrong, and I agree. The evidence presented by Lenneberg and Brown, Berlin and Kay, Kessen, Bornstein, and Weiskopf, and Malotki is overwhelming.

I believe that Lenneberg's 1953 study, followed by Lenneberg and Brown's 1954 study, explains the conundrum of perceived differences in worldviews caused by linguistic codability. They prove that linguistic codability can create the illusion of a difference in visual perception and worldview, where in reality, there is not one: speakers of Zuni are aware that there is a difference between the terms English speakers call yellow and orange. They are able to visually perceive said difference. However, since yellow and orange both fall under one

basic color term in Zuni, they are not able to name the two distinct colors. Lacking a name for something is not the same as lacking the ability to perceive and understand something.

Berlin and Kay's study strongly influenced my personal beliefs surrounding linguistic relativity. They attempt to prove the weak hypothesis by proposing that there are minor differences in color perception, but that overall, human beings will perceive the same colors due to the constraints of biology. If Whorf's hypothesis were true, they would not have found any consistent BCTs across languages, never mind being able to discern a pattern in which they appear.

Barbara Saunders' criticism, especially regarding the use of the Munsell color system as a tool for researching the way that language influences color perception, is unfounded. While it is true that much social research would best be done in a "natural" environment, that is not always an option due to time constraints, the ability to control variables, and the reliability of subjects. Perhaps color perception *would* best be tested outside the context of a formal study, but as of the time this paper was written, nobody had crafted a way to do that while simultaneously maintaining the study's efficiency and credibility.

I tend to agree with Paul Kay and Terry Regier in their paper *Language, thought, and color: Whorf was half right*, in which they claimed, "[t]here are universal constraints on color naming, but at the same time, differences in color naming across languages cause differences in color cognition and/or perception" (Regier & Kay, 2009, p. 6). Color is simultaneously influenced by culture and language and constrained by human physiology. Save for those who are visually impaired, every human is able to perceive the same colors. Every human can see all eleven of Berlin and Kay's basic color terms, and a person from a culture that only has three words for color would still be able to see colors that they cannot name, such as green or purple. They would simply have difficulty describing them using a basic color term and may instead resort to using non-salient terms such as "the color of grass in spring" or "the color of my favorite shirt."

Another supposed variation comes in the nuances for names of different hues of the same basic color terms, like crimson, emerald, and lilac. There may be slight variations in the ways that different linguistic groups perceive color that can be accredited to cultural or linguistic differences (e.g., a tribe living in the Amazon may be able to perceive and name slight differences in different shades of green more efficiently than someone who lives in downtown Berlin.) Color perception also can vary minimally among different groups in the same culture (e.g., a painter may perceive and name more variation in hues, and would call something "robin's egg blue," than a lawyer, who may call the same swatch "light blue") due to the nature of the environments in which they live and work. However, these variations are minimal and do not constitute massive shifts of worldview. Every human sees basically the same colors regardless of the language they speak or the culture from which they come.

In linguistics, as in most fields, while theories and hypotheses fall in and out of favor, they essentially operate constructively, building on one another as more data is collected and analyzed. Linguistic relativity is a complicated issue with rich literature and seemingly innumerable studies that are constantly being lauded by the linguistics community, and then just as quickly criticized or disproved as linguistics advances as a discipline and more knowledge is added to the pool. While it is generally agreed upon these days that the strong hypothesis and linguistic determinism are not effective ways to describe the way that language and worldview are intertwined, such a view was once widely accepted, and it is wholly possible that the current idea that language and thought influence each other will soon go out of style in favor of a new idea proven by a paper yet to be written.

The weak hypothesis should be further explored to determine the extent to which one's culture affects color perception, versus the extent to which biology affects color perception. To determine the effect of culture, I suggest a study using Munsell color chips to compare the perception of people who live in a large city with people who live relatively isolated in nature – perhaps the city people will be able to remember a larger variety of BCTs, while the people living in the Amazon will categorize fewer BCTs, but will be able to perceive slight differences in the hue of a single, important BCT.

The extent to which one's place within a particular culture (sex and gender roles, jobs, etc.) affects color perception should also be researched further. With regard to sex, it is believed that women differentiate between more colors than men, particularly in the green-blue region (Fider & Komarova, 2019), and according to Leonard Sax in his book *Why Gender Matters, Second Edition: What Parents and Teachers Need to Know About the Emerging Science of Sex*, that is tied to the fact that the structure of the eye in men and women is

actually different: women are more sensitive the color changes, while men are more attuned to movement (Sax, 2017). Men and women are biologically wired to perceive the world differently. So to what degree does biology influence the way we see color, and how does that manifest in the way men and women use language to describe their surroundings? Does increased color perception have to do with biology alone, or does it also have to do with gender roles imposed on men and women by society? If an increase in the ability to name colors only ever appears in women, and not in men who take on traditionally “feminine” roles, such as a primary caretaker to children, or men in color-heavy careers, such as artists or interior decorators, then nuances in color perception are (at least primarily) biological, and have little to do with imposed gender roles. If, however, it turns out that despite the differences in the male and female eye, nuanced color perception does appear in men who take on traditionally “feminine” roles, then we can assume that some aspect of color perception is learned.

5 Conclusion

In conclusion, I believe that language and perception are locked in a give-and-take situation. Language, culture, and biology are all factors that influence one another, and so all of them consequently influence worldview. Most humans experience the visual element of color in generally the same way due to our identical biology, but with slight nuances owing to our varying cultures and the roles and places we occupy within them.

References

- Berlin, B. & Kay, P. (1969.) Basic color terms: Their universality and evolution. Berkeley and Los Angeles: The University of California Press Pp. xi 178. *Journal of Linguistics*, 7(2), 259-268. doi:10.1017/S0022226700002966
- Bornstein, M. H., Kessen, W., & Weiskopf, S. (1976). Color vision and hue categorization in young human infants. *Journal of Experimental Psychology: Human Perception and Performance*, 2(1), 115–129. <https://doi.org/10.1037/0096-1523.2.1.115>
- Demos, R. (1964). Plato's philosophy of language. *Journal of Philosophy* 61 (20):595-610.
- Fider, N.A., Komarova, N.L. (2019). Differences in color categorization manifested by males and females: a quantitative World Color Survey study. *Palgrave Commun* 5:142. <https://doi.org/10.1057/s41599-019-0341-7>
- Higgins, C. F. "Gorgias of Leontini." Internet Encyclopedia of Philosophy, iep.utm.edu/gorgias/.
- Jraissati, Y. & Douven, I. (2018). *Delving Deeper Into Color Space*. i-Perception, 9. 204166951879206. 10.1177/2041669518792062.
- Kahane, H. & Kahane, R. (1983). "Humanistic linguistics". The Journal of Aesthetic Education. 17 (4): 65–89. doi:10.2307/3332265. JSTOR 3332265.
- Lenneberg, E.H. (1955). *The Denotata of color terms*. Massachusetts Institute of Technology. Center for International Studies.
- Malotki, E. (1983). *Hopi Time: A Linguistic Analysis of the Temporal Concepts in the Hopi Language*. Berlin, New York: De Gruyter Mouton. <https://doi.org/10.1515/9783110822816>
- Regier, T., & Kay, P. (2009). Language, thought, and color: Whorf was half right. *Trends in cognitive sciences*, 13(10), 439–446. <https://doi.org/10.1016/j.tics.2009.07.001>
- Sapir, E. & Swadesh, M. (1946). *American Indian Grammatical Categories*, WORD, 2:2, 103-112, DOI: 10.1080/00437956.1946.11659281
- Saunders, B. (2000). Revisiting Basic Color Terms. *The Journal of the Royal Anthropological Institute*, 6(1), 81–99. <http://www.jstor.org/stable/2660766>
- Sax, L. (2017). *Why gender matters: What parents and teachers need to know about the emerging science of sex differences*. Harmony Books.
- Whorf B. L. (1940). *Science and linguistics*. Technology Review.

Predictors of Success for Language Revitalization: Institutions, Education, and the Internet

Jinny Choi

Department of Linguistics, McGill University
LING 320: Introduction to Sociolinguistics
Professor Charles Boberg

Abstract

Language revitalization projects can differ in their goals, programs, and ways of finding funding due to the varying contexts in which these projects occur and the current situation of the language under study. To identify common predictors of success or failure in different language revitalization approaches, this paper will draw upon six different academic sources and the cases of South Sámi, Quichua, Cherokee, and Hawaiian to discuss the roles of the institution, education, and the internet in language revitalization, as well as the notable factors of each level that contribute to the success (or failure) of language revival. These notable factors will include sufficient funding and program diversity on the institutional level, immersion-style education models on the educational level, the online dissemination of resources, and the development of online language programs on the Internet level. Finally, the significance of identifying predictors of language revitalization success will be discussed in relation to future linguistic prospects.

1 Introduction

Language revitalization projects can take many different approaches characterized by different goals, programs, and ways of finding funding—all of which are contingent on the current situation of the language under study. Comparing the approaches of different language revitalization projects and their results allows for the identification of common predictors of success or failure in language revitalization work. This paper will compare six different sources to explore the roles of the institution, education, and the internet in language revitalization work, and the notable factors of each level that act as predictors for successful language revitalization or unsatisfactory results. The cases of South Sámi, Quichua, Cherokee, and Hawaiian—all languages that have undergone revitalization work—will be used to support the identification of these predictors.

2 Review of previous research

“The Role of Organizations in Language Revitalization” (Gessner et al., 2018) discusses the role of institutions in language revitalization programs, with the First Peoples’ Cultural Council of British Columbia serving as one example. The First Peoples’ Cultural Council is run by a First Nations committee which develops and delivers programs to support the revitalization of Indigenous languages and culture. These programs include full-immersion programs for young children, Mentor-Apprentice programs for adult learners, as well as training workshops for prospective teachers in language revitalization work. The First Nations Peoples’ Cultural Council’s biggest contribution to language revitalization work in British Columbia comes from providing funding to a multitude of different resources which focus on immersion, documentation, provision of teaching materials, and curriculum development. This source details how adequate funding of a variety of different resources has contributed to the success of language revitalization projects.

“Preschool and School as Sites for Revitalizing Languages with Very Few Speakers” (Todal, 2018) discusses the school setting as a site for language revitalization, using the case of South Sámi as an example. Initial efforts of revitalization of South Sámi in Norway demonstrate the limitations of a specific approach to language revival referred to as a “weak form of bilingual education.” In this approach, schools only used the South Sámi language in the subject South

Sámi and utilized Norwegian in all other contexts, reducing the students' exposure to South Sámi to only two or three hours per week. Since few of the children had exposure to the language outside of school, these classes proved to be inefficient in establishing basic competence in South Sámi among the children and parents were left dissatisfied with this approach. Subsequent efforts to improve the usage of South Sámi in Norway addressed these shortcomings by making adjustments to the education model, one of which was the adoption of an immersion-style model where children were exposed to South Sámi at much greater lengths and in various linguistic domains. The immersion-style model was deemed a success in the schools where it was implemented.

"Revitalizing the Cherokee Syllabary" (Montgomery-Anderson, 2018) discusses the role of the Internet in language revitalization work, highlighting how new technologies and social media have promoted literacy in Cherokee—an Iroquoian language indigenous to the United States—by supporting the presence of the Cherokee syllabary on digital platforms. A survey in the early 2000s by the Cherokee Nation found that only around 4% of the Cherokee population were able to read Cherokee, and less than 1% could write in the traditional Cherokee script. This sparked the development of three main initiatives for Cherokee revitalization: the founding of an immersion school, a Cherokee language Bachelor's degree program at Northeastern State University, and a Master-Apprentice program. All three of these initiatives were enhanced and supported by the increased presence of the syllabary in social media, a result of the Cherokee Nation Language Technology Program, which worked with multiple software companies to make the Cherokee Syllabary available on many digital platforms. As a result, there has not only been a noticeable increase in Cherokee language resources shared online, but an increase in the use of the Cherokee Syllabary in and around the city of Tahlequah.

"Language Revitalization: An Overview" (Hinton, 2001) provides a broad outline of language revitalization work, which includes common obstacles faced by language revitalization programs and successful approaches and their methods. To minimize obstacles, Hinton (2001) emphasizes the importance for institutions to fund a diverse set of programs in language revitalization, with the focus not only on full-immersion schools but also on programs for older learners and children outside of the regular school year. The importance of proper funding in the development and provision of language materials is also discussed, as many education-style language revitalization projects have faced impediments due to a lack of learning and teaching resources. Within the classroom, it is stated that the full-scale immersion approach is considered to produce the best results, as students are exposed to more of the language and in more various linguistic domains than in other education models. Hinton (2001) also brings attention to the value of incorporating cultural elements associated with the language into the curriculum, as it reinforces positive attitudes about languages that are often stigmatized.

Language Revitalization Processes and Prospects: Quichua in the Ecuadorian Andes (King, 2001) studies school and community efforts to restore the Quichua language in predominantly Spanish-speaking communities in Saraguro, Ecuador. This source discusses the shortcomings of the approach taken in Saraguro and how these shortcomings may be applied to future language revitalization work. In Saraguro schools, Quichua learning was restricted to only a few short lessons and activities each week, where the functions of Quichua were largely limited to translating and copying, and the content of instruction was mainly composed of basic vocabulary items and formulaic phrases. Furthermore, the teacher infrequently communicated with the children in Quichua, so the students were rarely exposed to authentic or naturalistic uses of the language. There also remained heavy stigmatization of the language, as many middle-aged Saraguro adults were reported to associate Quichua with low levels of education and socioeconomic status. King (2001) argued that the limited quantity and quality of Quichua instruction in the schools as well as the failure to address negative attitudes towards Quichua within the community led to poor results—the children were not able to develop basic competence in the language through school exposure alone.

"Technology and Indigenous Language Revitalization: Analyzing the Experience of Hawai'i" (Warschauer, 1998) discusses how technological developments have impacted language revitalization efforts for Hawaiian. Warschauer (1998) highlights some of the major challenges that modern revitalization projects face, and how new technologies are meeting these challenges in four areas: (1) the preservation of and access to authentic Hawaiian; (2) the development and dissemination of new materials; (3) connections among isolated

groups of speakers; and (4) achieving relevance. Converting old Hawaiian documents to microfiche and uploading filmed videos of authentic Hawaiian conversation to the internet allow for the preservation of the language, and the increased accessibility of the internet allows for those resources to be available to Native Hawaiians across several communities. More and more Hawaiians are beginning to use the internet as a way of developing and distributing original curriculum materials, and the development of an online presence for Hawaiian is helping to achieve relevance for the language in a technology-driven era.

3 The Role of Institutions

Although each speech community develops their own approach to revitalization, institutions are often developed to assist language revitalization work. The involvement of an institution—led by members of the language community itself—in language revitalization work is already a predictor of better results than the efforts of a smaller community due to the greater number of resources that large-scale organizations possess and the subsequent capacity to address whole regions. However, both Gessner et al. (2018) and Hinton (2001) show that, on the institutional level, the proper allocation of those resources is essential in maximizing the success of language revitalization programs. Gessner et al. (2018) highlight the work of the First Peoples' Cultural Council, which has funded full-immersion programs for young children, Mentor-Apprentice programs for adult learners, as well as training workshops for language teachers (p. 52). Although Hinton (2001) emphasizes full-immersion schools as the most effective education model for children, she also highlights the importance of childrens' programs outside of school and programs for adults. Summer programs serve to reinforce language skills developed during the regular school year and thus, have shown very good results in combination with regular school programs. While adult language programs rarely involve full immersion, programs such as the California Master-Apprentice Language Learning Program allow for adult learners to utilize immersion-style techniques by using the language while partaking in ordinary, commonplace activities with their mentor (Hinton, 2001, p. 10). As both sources emphasize a multifaceted approach that goes beyond a single school program that often only targets one age group, sufficient funding in a diverse set of programs is identified as a predictor of success in language revitalization work.

The First Peoples' Cultural Council also aids in the development and provision of teaching materials by funding FirstVoices, an online Indigenous language documentation and teaching resource (Gessner et al., 2018, p. 52). FirstVoices functions as a digital archive where language communities can create and share learning and teaching resources. Hinton (2001) also emphasizes the importance of proper funding in the development of language materials such as books, audiotapes, videotapes, and other media, not only to aid learning in classroom settings, but to properly document the language. A lack of proper language resources makes revitalization work exceedingly difficult, and there have been excellent programs, such as the California Indian Libraries Collection, which helped distribute materials for Indigenous languages, that unfortunately went dormant due to a lack of funding—negatively affecting the language revival process (Hinton, 2001, p. 11). Therefore, both sources identify sufficient funding in the development of learning and teaching materials as another way that institutions can aid in language revitalization work and also as a predictor of success in language revival.

4 The Role of Education

The education system is regarded as one of the most important sites of language revitalization work and is often the primary approach of language revitalization programs. However, language revitalization through schooling is often met with various obstacles—some of which were addressed in the discussion on the role of institutions in language revitalization—such as the lack of adequate funding in learning and teaching materials. Other obstacles arise from the design of the educational program itself. Todal's (2018) study on South Sámi showed that the most effective method of the educational approach comes from immersion, full immersion programs being the most valuable. While "weak forms of bilingual education" where the children are only exposed to the language a few hours per week and in a single subject are not necessarily predictors of failure, the case of South Sámi has made it apparent that this approach makes it exceedingly difficult for children to obtain and maintain competence. Only after Norwegian schools switched to an immersion-style model that exposed the children to South Sámi at much greater lengths and in various linguistic domains did results improve (Todal,

2018, pp. 76-77). Language revitalization work for Quichua also showed a similar pattern, as schools in Saraguro also utilized a “weak form of bilingual education” where children had little exposure to naturalistic uses of Quichua and learned through a few short lessons and activities each week. In Saraguro schools, teachers infrequently communicated with the children in Quichua and lessons mainly consisted of basic vocabulary and formulaic phrases. This approach was unsuccessful in establishing basic competence in Quichua among the children (King, 2001, p. 187). Thus, both sources suggest that longer exposure to the language and in multiple linguistic domains through an immersion-style model is a predictor for success in language revitalization work through the education system.

Hinton (2001) identifies the incorporation of cultural elements into the classroom as an essential for language revitalization work in Indigenous languages. She argues that the most successful education-based language programs work actively to bring the culture associated with the language into the curriculum, reinforcing positive attitudes towards the culture and consequently, the associated language (Hinton, 2001, pp. 9-10). The incorporation of culture into the classroom may include the use of traditional objects, teaching traditional subjects, and designing the shape of a classroom or school to fit traditional culture and values. King (2001) states that one of the most common reasons for failure in language revitalization work is negative attitudes towards the language internalized by the potential speakers themselves. These attitudes may have contributed to the lack of success of Quichua revitalization efforts, as many middle-aged Saraguro adults were reported to associate Quichua with low levels of education and socioeconomic status, and there were no efforts within the classroom to confront this stigmatization (King, 2001, p. 212). While King (2001) suggests that widespread stigmatization of a language and negative attitudes towards the language by the potential speakers themselves are predictors of failure, Hinton (2001) suggests that mechanisms to reduce these negative attitudes, such as the incorporation of cultural elements associated with the language into the education system, will produce better results in language revitalization work.

5 The Role of the Internet

The Internet has come to be a fundamental part of many present-day language revitalization programs. One role that the internet plays in language revitalization work is in the dissemination of language materials. The First Peoples’ Cultural Council funds FirstVoices, an online Indigenous language documentation and teaching resource that has been especially useful in language revitalization work in British Columbia (Gessner et al., 2018, p. 52). Language content that is uploaded to the archive can be accessed by different communities and subsequently used to create learning and teaching tools. In the case of Hawaiian, new technologies helped to preserve authentic Hawaiian use, allowing language activists to convert nineteenth-century Hawaiian newspapers into microfiche and film videos of elderly Hawaiian speakers. However, the problem of accessibility quickly arose, as Native Hawaiians were dispersed across different communities on several islands, and few had access to the university archives where these materials were being kept. Thus, the Internet became the primary method for Hawaiian language activists to disseminate these language resources (Warschauer, 1998, p. 142). With ample pre-existing documentation, even languages that no longer have any living speakers can be revitalized, despite the scarcity of resources or low accessibility to them making language revitalization increasingly difficult. Therefore, both sources demonstrate the importance of language resources and identify improved accessibility to these resources as a predictor of successful language revitalization work.

Another role that the Internet plays in language revitalization work is in helping the language achieve relevance. Achieving relevance is a challenge that underlies all language revitalization work, as speakers will only commit to learning and using the language if they regard it as a part of their future and not just their past. Warschauer (1998) argues that for a language like Hawaiian to be seen as a “real living language,” it must be seen, heard, and used everywhere, and that includes the use of computers (p. 145). To accomplish this, many Hawaiian language activists are continuing to develop various online programs in Hawaiian so that computer education in schools can be delivered in Hawaiian, to which the students have been reported to react positively towards (Warschauer, 1998, p. 146). In the past decade, the Cherokee Nation has taken multiple initiatives in attempts to revitalize Cherokee among its population. All of these initiatives have been enhanced and supported by the increased presence of the Cherokee script in social media, as the Cherokee Nation Language Technology Program has collaborated with many software companies to ensure that the Cherokee script is available on

multiple digital platforms (Montgomery-Anderson, 2018, p. 175). These technological developments have resulted in a noticeable increase in the use of the Cherokee script both online and in person, in and around the city of Tahlequah. Both sources highlight how the internet has played a huge role in establishing relevance for Hawaiian and Cherokee, and the continued development of new technologies—either online programs for educational use or the availability of a writing system on electronic devices—have shown to be a potential predictor of success for language revitalization work due to their positive effects.

6 Conclusion

The analysis of six different textual sources have displayed the roles of institutions, education, and the Internet in language revitalization work, as well as the predictors of success or failure on each level. On the institutional level, sufficient funding in a diverse set of programs is identified as a predictor for success in language revitalization work. Funding programs beyond a single educational-style approach, such as summer programs outside of the regular school year or language programs for adults, encourage language revitalization for more than one age group and support language use in various linguistic domains. Sufficient funding in the development of learning and teaching materials to simultaneously preserve the language and be used in classroom settings is also a predictor of success. On the educational level, immersion-style education models are predictors of success as they expose learners to more of the language and produce better results than “weak forms of bilingual education.” The incorporation of cultural elements into the school curriculum is also recognized to positively impact language revitalization work, as it reinforces positive attitudes towards the often-stigmatized language. The Internet has also come to play a large role in language revitalization, as it is now a method of language preservation, disseminating resources across entire communities, and achieving relevance. Both increased accessibility to language resources and the development of online language programs have had positive effects on language revitalization work. Finally, identifying predictors of success from earlier language revitalization projects may be especially helpful for future prospects. If factors that were found to produce positive effects are taken into account in the future modeling of language revitalization programs, language shift for more languages may be successfully reversed.

References:

- Gessner, S., Florey, M., Slaughter, I. Y., & Hinton, L. (2018). The Role of Organizations in Language Revitalization. In L. Hinton, L. M. Huss, & G. Rosse (Eds.), *The Routledge Handbook of Language Revitalization*. Routledge, an imprint of the Taylor & Francis Group.
- Hinton, L. (2001). Language Revitalization: An Overview. In L. Hinton & K. L. Hale (Eds.), *The Green Book of Language Revitalization in Practice*. Academic Press.
- King, K. A. (2001). *Language revitalization processes and prospects: Quichua in the Ecuadorian Andes* (Ser. Bilingual education and bilingualism, 24). Multilingual Matters LTD.
- Montgomery-Anderson, B. (2018). Revitalizing the Cherokee Syllabary. In L. Hinton, L. M. Huss, & G. Rosse (Eds.), *The Routledge Handbook of Language Revitalization*. Routledge, an imprint of the Taylor & Francis Group.
- Todal, J. (2018). Preschool and School as Sites for Revitalizing Languages with Very Few Speakers. In L. Hinton, L. M. Huss, & G. Rosse (Eds.), *The Routledge Handbook of Language Revitalization*. Routledge, an imprint of the Taylor & Francis Group.
- Warschauer, M. (1998). Technology and Indigenous language revitalization: analyzing the experience of Hawai'i. *Canadian Modern Language Review*, 55(1), 139–159.

A Comparison of Canadian and British English Through Newspapers

Alison Yu

Department of Linguistics, McGill University
LING 325: Canadian English
Professor Charles Boberg

Abstract

This paper investigates whether Canadian English has converged with British English during the past fifty years, through the analysis of newspapers. Four groups of newspapers were selected for this study: Canadian newspapers in the 1960s and the 2000s, and British newspapers in the 1960s and the 2000s. The study compares five variables chosen from the 1972 paper “The Survey of Canadian English: A Report” by Scargill and Warkentyne. The five variables are the following: “mailman vs. postman”, “icing vs. frosting”, “chesterfield vs. sofa”, “color vs. colour”, and “defense vs. defence”. For each variable, a British variant and an American variant was chosen to analyze which variant Canadian newspapers would choose to use. For each newspaper, both variants of each variable were searched in all the editions published during the time period of 1960 to 1970 and 2000 to 2010, respectively. The percentages of the variants are then compared. The results showed that, of the five variables studied, Canadian newspapers prefer the British variants over the American one, and that the younger generation seemed to shift towards British English in general.

1 Introduction

This report will be based on the 1972 paper “The Survey of Canadian English: A Report” by Scargill and Warkentyne. In this paper, a questionnaire of 104 linguistic variables were designed, ranging from pronunciation, grammar, and vocabulary to spelling. The survey aimed to understand how spoken Canadian English differed across generations and provinces. The result contained answers from 14 228 Canadian English speakers who were categorized by sex, generation, and province. The authors provided a discussion for each linguistic variable, which offered insight into spoken Canadian English at the time. With this report, I attempt to compare my results with the Scargill and Warkentyne survey, to determine the changes of Canadian English in the last few decades.

Five linguistic variables selected from Scargill and Warkentyne (1972) will be studied in this report: “mailman vs. postman”, “icing vs. frosting”, “chesterfield vs. sofa”, “color vs. colour”, and “defense vs. defence”. The first three variables are distinguished by choice of vocabulary, while the remaining two variables show differences in spelling. The discussion and hypothesis for each variable is the following.

1.1 Mailman vs. Postman

According to Scargill and Warkentyne (1972,) “mailman” is usually associated with American English and “postman” with British English. In the survey, Canadian anglophones generally prefer calling the person who delivers letters “mailman”. The younger generation was even more likely to use “mailman” than the older generation. It is then predicted that our results from the Canadian newspapers in 1960-1970 would use “mailman” and “postman” interchangeably while skewing towards “mailman”. The results from 2000-2010 may have a greater preference towards “mailman” than that of the older generation. British newspapers, on the other hand, are predicted to show a significantly stronger preference towards “postman” in both generations compared to their Canadian counterparts.

1.2 Icing vs. Frosting

This variable will determine what word Canadian and British newspapers prefer using when referring to the sweet covering on top of a cake. Scargill and Warkentyne (1972) claimed that “icing” is the British usage

and “frosting” is the American usage. Eastern Canadian answers in the survey showed preference on “icing” in both generations, but the two variants are often used interchangeably. I thus hypothesize that Canadian and British newspapers will both favor the word “icing”. “Frosting” is predicted to appear occasionally in Canadian newspapers, while British newspapers may have a stronger preference for “icing”.

1.3 Chesterfield vs. Sofa

“Chesterfield” is an example of Canadianisms, which is a word that is only frequently used in Canada without being a standard form in the UK or the US (Boberg 2010: 117). The data from the Scargill and Warkentyne survey also indicated that “chesterfield” is strongly preferred by Canadians in 1972. However, “chesterfield” had its prime around the 1950s, and its usage has since declined (Chambers 1990.) As a result, it is hypothesized that “chesterfield” may be the dominant usage in Canadian newspapers from 1960-1970, but “sofa” would be the widespread usage in newspapers from 2000-2010. Scargill and Warkentyne (1972) also claimed that “chesterfield,” though not very common, is also used in British English. It could be hypothesized that British newspapers may consistently prefer the variant “sofa” across the generations, while the variant “chesterfield” is predicted to appear occasionally.

1.4 Color vs. Colour

Scargill and Warkentyne (1972) stated that “color” is the American spelling while “colour” is the British spelling. It was shown in the survey that both generations of Canadians are slightly more partial to “colour”, although the two variants are often used interchangeably. In addition, the survey suggests that the younger generation favors the spelling “colour” more than the older generation. While the general public may prefer the longer variant, mainstream newspapers in Canada used “color” in their articles as the shorter variant requires less effort to type by hand (Pratt 1993). However, readers expressed complaints as they wanted to differentiate themselves from the U.S through spelling. In the 1990s, these newspapers changed back to “colour” because of these complaints (Hefferman et. al. 2010). I thus hypothesize that the older generation of newspapers in Canada will use the variant “color”, while “colour” will be the dominant variant in the younger generation. British newspapers are predicted to utilize the spelling “colour” heavily in both generations.

1.5 Defense vs. Defence

The 1972 survey demonstrated that Canadians prefer “defence”, the British spelling, to “defense,” the American spelling. There also appeared to be an increase in using the American spelling among the student generation in the survey. I thus predict that the 1960-1970 generation of Canadian newspapers will favor “defence,” while 2000-2010 newspapers will favor “defense.” I hypothesize that the British usage in newspapers will be “defence” in both generations.

2 Method

I selected five Canadian and five British newspapers to study the linguistic variables in this report. The five Canadian newspapers are the Globe and Mail, Toronto Star, Ottawa Citizen, Montreal Gazette, and the Kingston Whig Standard. All the chosen newspapers are in Eastern Canada, more specifically, Ontario and Quebec. The five British newspapers are the Guardian, the Telegraph, the Times, Daily Mail and Evening Standard, which are all located in England. The newspaper archives are retrieved from the ProQuest databases (<https://www.proquest.com>), Gale databases (<https://www.gale.com>), and the website Newspapers.com (<https://www.newspapers.com>). I then selected two generations, the 1960s and the 2000s, to examine the change in language in both Canadian and British English. The older generation of newspapers is chosen to represent the time of the Scargill and Warkentyne survey, and the younger generation represents the language that is used in modern society. For each newspaper, both variants of each variable were searched in all the editions published during the time period of 1960 to 1970 and 2000 to 2010, respectively. The number of results for each variant will then be compared.

Some considerations were put into the choice of variables. The chosen variables must refer to objects that exist both in the 1960s and the 2000s. For example, “bank machine vs. cash dispenser” would be an unsatisfactory variable as this type of machine was not relevant in the 60s. Since the study was conducted by searching within newspaper archives, the words should have as few meanings as possible to avoid unwanted results. For example, the variable “crisps vs. chips” would be unsatisfactory as the only variable of interest would be the one referring to the thin-layered snack and not French fries. Since both definitions denote food made of potatoes, it could be quite hard to filter them when searching on newspaper archival websites.

Filters were added to two variables to ensure desired results. Many entries of “de-icing” were found when searching the variant “icing”. Therefore, the word “cake” was added when searching for the variable of “icing vs. frosting”. Each variant had to appear with the word “cake” at the same time in each entry to be considered. Likewise, “chesterfield” is a name of several places, a cigarette brand, and a possible last name. As a result, a similar approach was applied to the variable “chesterfield vs. sofa”, where the word “furniture” was added to the search.

3. Results and Discussion

In this section, the data of each variable will be presented individually, and the discussion of the variable will follow. The percentages are the number of entries that include the discussed variant in their respective newspapers and decades divided by the number of entries that contain either of the two variants of the examined variable in the respective newspaper and decade. For example, the frequency of the word “mailman” appearing in the Globe and Mail in the 1960s is 43%. This implies that of all the entries that include either the word “mailman” or the word “postman,” 43% of them include “mailman.”

3.1 Mailman vs. Postman

	The Globe and Mail	Toronto Star	Ottawa Citizen	Montreal Gazette	The Kingston Whig Standard
Mailman 1960-1970	43%	39%	36%	39%	48%
Mailman 2000-2010	31%	31%	31%	31%	49%
Postman 1960-1970	61%	68%	70%	65%	55%
Postman 2000-2010	70%	69%	62%	70%	53%

Table 1. The percentage of “mailman” and “postman” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in Canadian newspapers.

	The Guardian	The Telegraph	The Times	Daily Mail	Evening Standard
Mailman 1960-1970	5%	1%	1%	3%	1%

Mailman 2000-2010	5%	2%	2%	4%	3%
Postman 1960-1970	95%	99%	99%	97%	99%
Postman 2000-2010	95%	98%	98%	96%	99%

Table 2. The percentage of “mailman” and “postman” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in British newspapers.

Surprisingly, Canadian newspapers seem to slightly prefer “postman” over “mailman”, as seen in Table 1, which goes against my hypothesis. This phenomenon is present in both decades, as there seems to be no shift towards any of the words in the younger generation. The usage frequency of both mailman and postman seems to be similar among Canadian newspapers, with the exception of the Kingston Whig Standard, in which “mailman” and “postman” seem to be used equally in both decades. There are three reasons that may have contributed to this. Firstly, Eastern Canadians are less likely to choose to say “mailman” than Western Canadians in the Scargill and Warkentyne survey. Instead, they are more likely to choose either one of them. However, according to the survey, Eastern Canadians still prefer to use “mailman” rather than any other variants. Additionally, there could have been other terms containing the word “postman” in the search results, e.g., “postman blue.” On the other hand, British newspapers show a strong preference for “postman” across the two generations to the point where “mailman” is almost never used, as seen in Table 2, which supports the hypothesis. Compared to their Canadian counterparts, British newspapers are more consistent in their word choice across generations.

3.2 Icing vs. Frosting

	The Globe and Mail	Toronto Star	Ottawa Citizen	Montreal Gazette	The Kingston Whig Standard
Icing 1960-1970	82%	74%	75%	75%	72%
Icing 2000-2010	92%	91%	92%	88%	85%
Frosting 1960-1970	32%	33%	37%	35%	43%
Frosting 2000-2010	10%	13%	13%	16%	21%

Table 3. The percentage of “icing” and “frosting” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in Canadian newspapers.

	The Guardian	The Telegraph	The Times	Daily Mail	Evening Standard
Icing 1960-1970	95%	99%	97%	99%	96%

Icing 2000-2010	98%	99%	99%	99%	99%
Frosting 1960-1970	6%	1%	4%	1%	6%
Frosting 2000-2010	2%	1%	2%	2%	2%

Table 4. The percentage of “icing” and “frosting” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in British newspapers.

As shown in Table 3 and Table 4, my hypothesis for this variable is correct. Both Canadian and British newspapers seem to prefer “icing” over “frosting”. Approximately thirty-five percent of the entries in all Canadian newspapers in the 1960s mentioned “frosting”. However, the percentage dropped to only about ten percent in the 2000s. It is implied that there has been a shift towards a stronger preference for the British variant in the younger generation in Eastern Canada. It also appears that Canadian newspapers sometimes use both terms in the same entry, as some of the percentages of “icing” and “frosting” are well over a hundred percent when combined. In contrast, this phenomenon is quite rare in British newspapers. This suggests that Canadians use the variants interchangeably, while the British are less likely to do so.

3.3 Chesterfield vs. Sofa

	The Globe and Mail	Toronto Star	Ottawa Citizen	Montreal Gazette	The Kingston Whig Standard
Chesterfield 1960-1970	70%	78%	89%	77%	85%
Chesterfield 2000-2010	22%	16%	13%	4%	12%
Sofa 1960-1970	46%	46%	40%	64%	29%
Sofa 2000-2010	98%	94%	99%	98%	95%

Table 6. The percentage of “chesterfield” and “sofa” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in British newspapers.

	The Guardian	The Telegraph	The Times	Daily Mail	Evening Standard
Chesterfield 1960-1970	79%	35%	40%	33%	38%
Chesterfield 2000-2010	6%	10%	8%	6%	5%

Sofa 1960-1970	24%	67%	66%	70%	68%
Sofa 2000-2010	95%	96%	96%	96%	98%

Table 6. The percentage of “chesterfield” and “sofa” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in British newspapers.

Overall, the data indicates that the hypothesis on this variable was correct, as seen in Table 5 and Table 6. It appears that “chesterfield” is the predominant usage in Canadian newspapers for the name of the furniture in the 1960s. The data also shows that “chesterfield” and “sofa” often appeared together, which may suggest that they were used interchangeably. However, the usage of “chesterfield” declined drastically in the younger generation, although it hasn’t completely disappeared. The word “sofa” is now the most prominently used in both the UK and Canada. It appears that “chesterfield” is somewhat present in British newspapers in the older generation. The Guardian returned a high frequency of 79% while other newspapers returned frequencies of roughly 35%. Upon closer examination, while some entries still contained “chesterfield” as names of places or brands after the filter, the usage of referring to an upholstered couch also exists. Similarly to their Canadian counterparts, British newspapers also demonstrates a significant drop in “chesterfield” and a rise in “sofa” when moving to the modern generation. The data also suggests that “chesterfield” was more widely used in Canada than in Britain fifty years ago, yet both nations prefer to use “sofa” in the modern times. “Couch” is also a popular variant of the variable, which may have contributed to the decline of “Chesterfield”.

3.4 Color vs. Colour

	The Globe and Mail	Toronto Star	Ottawa Citizen	Montreal Gazette	The Kingston Whig Standard
Color 1960-1970	78%	76%	74%	73%	93%
Color 2000-2010	10%	19%	23%	34%	19%
Colour 1960-1970	27%	28%	33%	35%	10%
Colour 2000-2010	92%	86%	85%	71%	85%

Table 7. The percentage of “color” and “colour” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in Canadian newspapers.

	The Guardian	The Telegraph	The Times	Daily Mail	Evening Standard
Color 1960-1970	2%	1%	2%	0%	0%
Color 2000-2010	2%	2%	2%	2%	2%

Colour 1960-1970	99%	100%	99%	100%	100%
Colour 2000-2010	98%	99%	98%	99%	98%

Table 8. The percentage of “color” and “colour” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in British newspapers.

While it may be evident that the results in Table 7 would align with the hypothesis as mentioned in the introduction, knowledge about Canadian English may still be deducted. I analyze these results as showing that the spelling “color” may have been deemed more acceptable in the 1960 to 1970’s than in the 2000 to 2010’s, as newspapers were keen to use it. Since the newspapers switched to “colour” because of the complaints and never switched back, I speculate that Canadians favor “colour” greatly over “color” in younger generations. However, there are still some entries that do not fit with the policies of Canadian newspapers. It may be that these entries are names of brands, shows, or products, etc., from America or Britain, since Canada is largely influenced by both countries (Boberg 2010: 106-108). British newspapers consistently chose to use “colour” over the decades in Table 8, which the hypothesis successfully predicted. The spelling “color” is almost non-existent in British newspapers.

3.5 Defense vs. Defence

	The Globe and Mail	Toronto Star	Ottawa Citizen	Montreal Gazette	The Kingston Whig Standard
Defense 1960-1970	6%	3%	5%	15%	2%
Defense 2000-2010	6%	9%	8%	14%	6%
Defence 1960-1970	95%	98%	96%	89%	99%
Defence 2000-2010	95%	93%	94%	88%	95%

Table 9. The percentage of “defense” and “defence” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in Canadian newspapers.

	The Guardian	The Telegraph	The Times	Daily Mail	Evening Standard
Defense 1960-1970	0%	2%	3%	1%	0%
Defense 2000-2010	1%	3%	3%	3%	1%

Defence 1960-1970	100%	100%	99%	100%	100%
Defence 2000-2010	99%	99%	99%	99%	99%

Table 10. The percentage of “defense” and “defence” in the decades 1960-1970 and 2000-2010 appearing in an entry where either of them is mentioned in British newspapers.

As seen in Table 9 and Table 10, both countries seem to favor “defence” over “defense”, contrary to my prediction that newspapers during 2000-2010 in Canada would favor “defense”. The occurrences of “defense” remain low in both decades and both nations. Nevertheless, the usage of “defense” is still somewhat more prominent in Canadian newspapers than that of the British, which aligns with my hypothesis. Montreal Gazette returned frequencies of around 15 % in using “defense” in both decades, which is the highest of all newspapers examined. I hypothesized that the younger generation of Canadian newspapers would prefer “defense”. Yet upon closer examination of the Scargill and Warkentyne survey, the student generation in Eastern Canada at that time did not shift to “defence” significantly. In fact, there was only a slight decrease of “defence” between the parent generation to the student generation. It could be assumed that the student generation in 1972 preferred “defense”, but the shift didn’t last until the 2000s, which could be accounted for this unexpected result.

4. Conclusion

In conclusion, of the five variables studied in this report, Canadian newspapers seem to prefer the British word choices and spellings over American ones. The younger generation also seems to shift towards British English, more than the older generation, except for the variable with the Canadianism “chesterfield”. While five variables may be an insufficient sample size to make a conclusion about the variety of language, it could be inferred that of the variables studied in this report, Canadian English has converged to British English since the time of Scargill and Warkentyne (1972). Canadian newspapers also tend to use both variants of a linguistic variable interchangeably, as the percentage of the two terms were often more equally divided while the ones in British newspapers were more extreme. This may provide evidence that Canada is influenced by both America and Britain, at the same time. In contrast, British newspapers are more prone to have a strong preference for one of the two words in a variable. British word choices also remained homogenous throughout time, while it could be implied that Canadian word choices seem to shift between American and British word choices from time to time.

Several ideas could be explored for future studies in the topic of this report. While the searches of the variables were already filtered accordingly, there were still undesired entries in the results. It is possible to ignore these unwanted entries since the total number of each search were often of thousands or tens of thousands. However, it would be ideal if these entries could all be successfully filtered out. As checking through the entries one by one would be time consuming if done manually, using computers and apply algorithms to check through the results would be beneficial in future studies. In addition, comparing written Canadian English to spoken Canadian English would also be interesting. This report does not differentiate between the two, as Scargill and Warkentyne (1972) worked with spoken and written Canadian English and newspapers obviously only represent written English. It would be fascinating to study written and spoken forms complementarily in future studies.

References

- Boberg, C. (2010). *The English Language in Canada: Status, History and Comparative Analysis* (Studies in English Language). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511781056
- Chambers, J. K. (1990). The Canada-US Border as a Vanishing Isogloss: The Evidence of Chesterfield. *Journal of English Linguistics*, 23(1-2), 155-166. <https://doi.org/10.1177/0075424290023001-213>
- Heffernan, K., Borden, A. J., Erath, A. C., & Yang, J. L. (2010). Preserving Canada's 'honour': Ideology and diachronic change in Canadian spelling variants. *Written Language & Literacy*, 13(1), 1-23.
- Pratt, T. K. (1993). The Hobgoblin of Canadian English Spelling. In Sandra Clarke (ed.), *Focus on Canada*, 45-64. Amsterdam: Benjamins.
- Scargill, M. H., & Warkentyne, H. J. (1972). The Survey of Canadian English. *The English Quarterly*, 5(3), 47-104.
- Trudgill P. & Hannah J. (1985). *International English: A Guide to Varieties of Standard English* (2nd ed.). London: E. Arnold.

Do I Talk Funny?: An acoustic analysis of Vancouver Island, Metro Vancouver, and Chicagoland English

Ella Brown, Anna Ketch, Jackson Harris

Department of Linguistics, McGill University
LING 325: Canadian English
Professor Charles Boberg

Abstract

This study examines the variable amounts of raising between urban and rural communities in British Columbia with the Chicagoland urban community. Through a close look at the distribution of /æ/, /aɪ/, and /ao/ raising in different phonetic contexts across all three geographic areas, we found differences between Canadian speakers as well as diversity between different communities in BC. Using acoustic analysis, we found /aɪ/ and /ao/ raising among speakers from the rural Vancouver Island group, while the Chicago and Metro Vancouver group exhibited significant raising of only /ao/. Regarding /æ/ raising, this appeared to be phonetically conditioned to raise before the velar nasal among speakers of all regions. While this phonetic context is important other factors appear to be at play given that raising before /g/ only occurred among Canadians, illuminating the need for further study of the /æ/ variable to examine whether it appears to be in stable variation or perhaps part of a larger change progress.

1 Introduction

This study focuses on variation in Canadian Raising in /ao/ and /aɪ/ before stops and fricatives and ash-raising through a dialectological approach comparing vowel height and backness between speakers from Metro Vancouver (MV), Vancouver Island (VI), and the greater Chicagoland area (CL). From anecdotal observation of our own speech patterns and those of our peers, we noticed differences between the extent of both Canadian Raising and ash-raising between VI and MV speakers where both phenomena appear more pronounced on VI. Based on previous research in the *Atlas of North American English*, we hypothesized that we would see /aɪ/ raising in all three locations, /ao/ raising in VI and MV to different extents but not in CL, and /æ/ raising before /ŋ/ in all regions, and before /g/ in VI and MV.

2 Regions and previous studies

Vancouver Island, separated from the west coast of mainland Canada by the Georgia Strait, is the second most populous island in the country with almost 900,000 inhabitants. It was briefly settled by Spain, established as a British colony in 1849, and joined with mainland BC in 1864 (Vancouver Island, 2020). Given VI's different settlement history it is unsurprising that Walter Avis' "The English Language in Canada *Current trends in linguistics*" (1973) highlights the uniqueness of the dialect found on Vancouver Island. He emphasizes that "there are, of course, regional variations to be found in Canada [...] for example, [...] on Vancouver Island" although he does not elaborate on what these variations are nor cite research on them. There is very little research about phonetic variation on VI, with most of it taking place in Victoria – the provincial capital and urban centre of the island. Rosenfelder (2005) found that a centralization of /ao/ existed in Victoria. Our study focuses on rural areas, with the majority of participants coming from the Cowichan Valley, which we anticipate will conserve variants not found in urban centres.

Metro Vancouver is the third largest metropolitan area in Canada, and the largest in BC with a population of almost 2.5 million occupying the southwest corner of mainland British Columbia. While some consider Canadian English to be relatively homogeneous, the dialect spoken here has some unique features. According to the *Atlas of North American English*, Vancouver English speakers don't tend to have raising in the MOUTH vowel (/ao/) or before voiceless consonants like many of their inland Canadian peers but do have raising in the PRICE vowel, /aɪ/. With regards to the /æ/ vowel, Canada as a whole has significantly less fronting

before nasals than dialects from the states. Additionally, British Columbians have a merger of /eɪ/ and /æ/ before /g/ (Labov, Ash, and Boberg 2006).

Chicago, a beautiful metropolis on the southern shores of the great Lake Michigan, is a part of the Inland North region and the metropolitan area is home to approximately 9.5 million speakers. While this regional dialect was historically the basis for a supposed standard “General American” dialect, the distinctive features of the Northern Cities Shift (NCS) documented in 1969 by Fasold means that this dialect is not unmarked (Labov et. al 2006:190). According to the *Atlas of North American English*, raising and fronting of the BATH vowel /æ/ is a large part of the NCS, which CL takes part in. However, according to the Atlas, the characteristic raising and fronting of /æ/ is diminishing in apparent time (Labov et. al 2006:192). Since the CL speakers in this study are predominantly young adults, the difference here between American speakers and their Northern peers may not be as large as it once was. Also of note is that our CL speakers are all Jewish, which could explain unexpected phonological differences. For example, non-raised pre-nasal /æ/ is typical of many Jewish people, especially Orthodox Jews (Benor 2018), although among the general population, raising is typically the greatest pre-nasal.

Regarding the PRICE vowel /aɪ/, Canadian linguist J. K. Chambers (1973, 1989) reported instances of the Canadian raising phenomena before voiceless consonants in the United States, although raising is not connected with the movement in the vowel space that occurs with elements of the NCS. While Canadians tend to raise /aɪ/ selectively before some vowels, /aɪ/ raising tends to be more general in the northern U.S (Chambers 2006). In terms of /aʊ/ raising in CL, we did not anticipate any raising and did not find historical evidence to suggest it in the area.

Chambers wrote in 1980 that “as fronted vowels become more frequent during the progress of the change in succeeding generations, we can expect that failure to raise the onset before a voiceless consonant will also become more frequent,” predicting a possible disappearance of Canadian raising. Further, Chambers (1981) predicts that the tendency towards /aʊ/ fronting “will thus establish the onset vowel of the diphthong for the youngest group as normally central.”

3 Method

There are three main portions to the data gathering process of this study. The first part being data collection through a Google Form, the second being formant analysis through the use of the linguistic analysis software Praat, and the third being the normalization of collected formant values. To collect data, we invited 21 speakers from Vancouver Island, 19 speakers from Metro Vancouver, and 20 speakers from the greater Chicagoland area to complete the form. All of our speakers were either adult Gen Z (1998-2004) or Gen X (1965-1980), with the vast majority coming from Gen Z. We asked participants for their year of birth, sex, the region they had grown up in from ages 5-15, current place of residence, and level of education. We then provided a word list of anchor vowels and twelve sentences targeting the MOUTH, PRICE, and BATH vowels, and participants had the ability to upload an audio sample¹.

Although not all of our participants are from the same social class and ethnic groups, our speakers tended to be educated, and middle or upper middle class. The audio samples we gathered align relatively closely with a prestige dialect of North American English, which is likely a reflection of the speakers’ sociolinguistic identity and compounded by the fact that the word and sentence list format we used tends to elicit careful speech. In fact, several participants asked if they had pronounced the words “correctly” and if they “talk funny,” suggesting that some participants have style-shifted to align with an idealized and unmarked standard North American English.

To analyze data, we uploaded our participants’ recordings into Praat. In Praat, we measured the first (F1) and second (F2) formants of each participant’s anchor vowels as well as the F1 and F2 of the nucleus of their MOUTH, PRICE, and BATH vowels. To normalize our data, we used Neary’s Constant Log Interval Hypothesis which involved two steps. We calculated a scaling factor for each speaker using the F1 and F2 values from the anchoring vowels. Then, we multiplied the F1 and F2 values of our targeted MOUTH, PRICE,

¹ See appendix A for full reading list of anchor vowels as well as sentences targeting the MOUTH, PRICE, and BATH vowels

and BATH vowels by the scaling factor in order to most accurately compare speakers and minimize the effects of biological differences such as vocal tract length. All numerical values presented in this paper are normalized according to this method.

As this study looks at raising and fronting, we decided to define raising as a difference greater than 60 Hz between the F1 values for vowels that occur before voiced codas and the F1 values that occur before voiceless codas and fronting as a difference of 60 Hz between the F2 values when looking at average differences. An average difference near 60 Hz suggests that raising is present in some of the population and not others.

4 Results and discussion

The minimal set “back,” “bag” and “bang” targets the realization of the /æ/ vowel before voiced, voiceless, and nasal velar consonants. “Beg” was included as a comparison based on observations that there could be a merger in VI English between /ɛg/ and /æɡ/. The following graphs plot each speaker’s F1 and F2 values for the centre of each vowel.

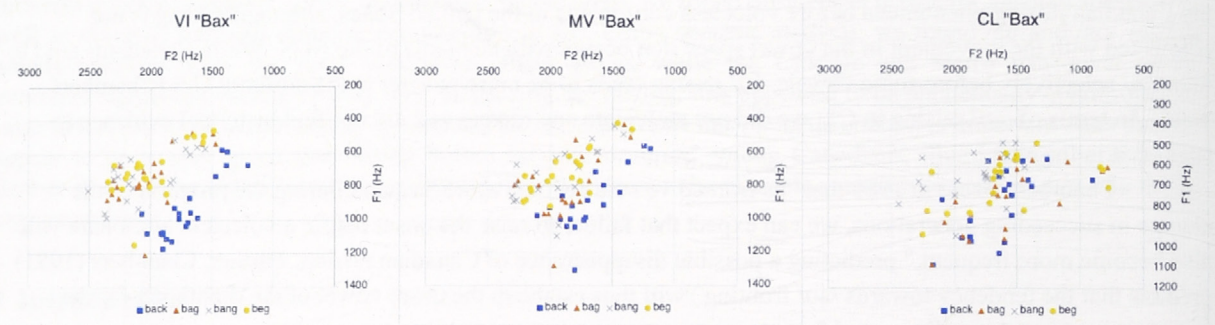


FIGURE 1

In Fig. 1 for VI, the vowels in “beg,” “bang,” and “bag” are in a similar distribution (“bang” being slightly more fronted and less raised), while the area of distribution for “back” overlaps with none of them. In MV “beg” and “bang” are in nearly the same distribution and while “bag” covers the same area there is a concentration of “bag” values toward the lower centre of the distribution cloud. “Back” more closely overlaps with the others in MV than VI. CL shows much broader overlapping variation for all four tokens, though there is a trend for “bang” to be higher and more fronted, and for “beg” to be higher than both “back” and “bag” which are very similar.

This is supported in Fig. 2 below, comparing the average vowel quality by region. “Back” is very low and both “bag” and “beg” are very fronted in VI and MV compared to CL (VI more so than MV).

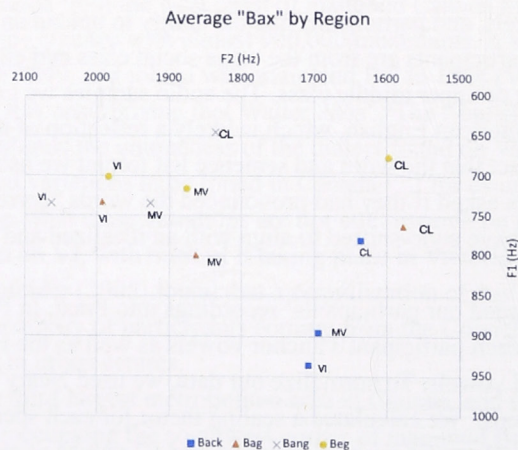


FIGURE 2

Table 1 below compares the average F1 and F2 value differences by region.

Region	Bag F1-BackF1 (Hz)	Bag F2-BackF2 (Hz)	Bang F1-BackF1 (Hz)	BangF2-Back F2 (Hz)	Bag F1-BegF1 (Hz)	Bag F2-BegF2 (Hz)
CL	-17	-58	-135	201	86	-19
VI	-202	284	-201	356	31	7
MV	-97	169	-161	232	82	-12

Table 1

This shows that “bag” is generally not raised for CL English speakers, and is close to the benchmark where it is considered retracted. It is raised and fronted in both VI and MV, although significantly more amongst VI speakers. “Bang” is raised and fronted in all three regions although the fronting is significantly more pronounced for VI. We found “beg” and “bag” to be very similar for VI – within the range of variation we saw between a given speaker's anchoring vowel tokens. It is interesting to note that the difference values for CL and MV are remarkably similar, perhaps reflecting the fact that both areas are larger urban centres and the speakers we analyzed there may be trending towards the adoption of a similar urban standard.

The minimal pairs “lice” and “lies” as well as “height” and “hide” are differentiated through a voicing contrast between the alveolar obstruents in their coda positions, with the former pair ending in a fricative and the latter in a plosive. These pairs both target the PRICE vowel. We examined the nucleus of the diphthong to measure the amount of raising that occurred when the coda was voiceless. Figure 3 illustrates that all three regions have significant amounts of vowel raising prior to voiceless stops when compared with voiced stops.

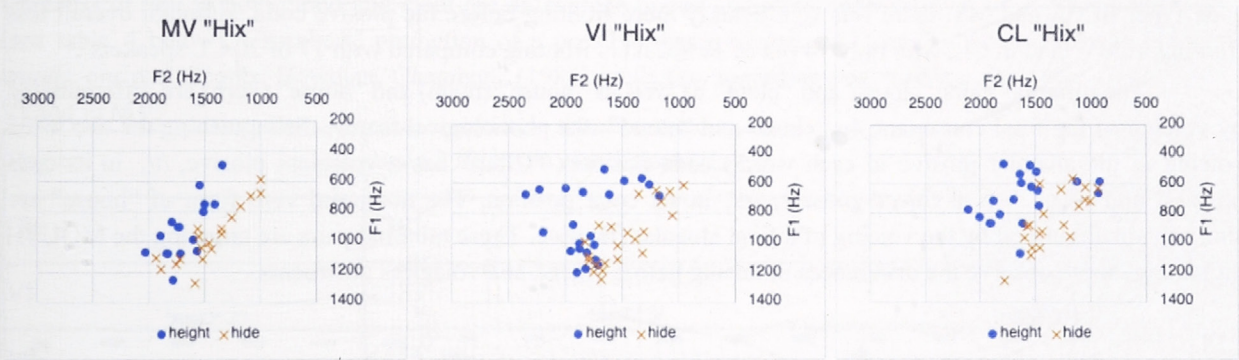


FIGURE 3

While there is still significant amounts of vowel raising prior to voiceless fricatives when compared with voiced fricatives, the manner of articulation in the coda appears to change the amount of raising and fronting, as seen in the graphs below.

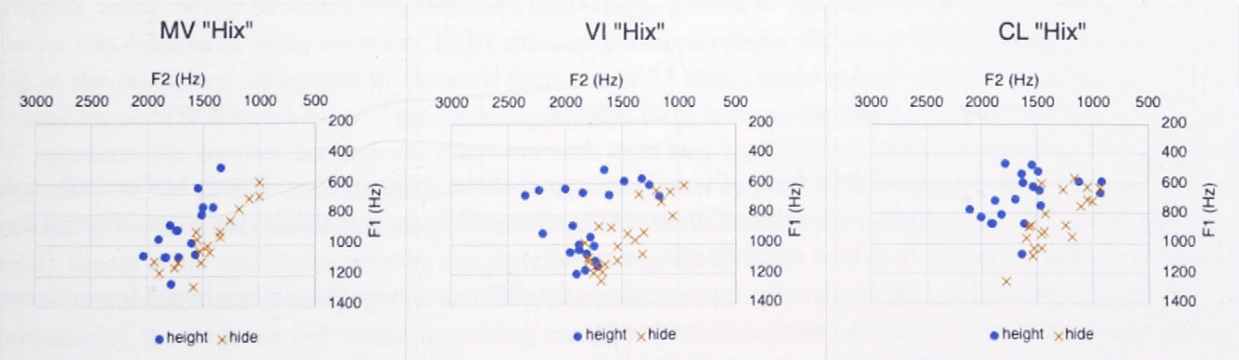


FIGURE 4

Table 2 below illustrates the average differences in height and backness between the vowels before voiceless vs voiced consonants. A larger absolute difference in F1 implies more raising or lowering, whereas a larger absolute difference in F2 implies more fronting or retracting. The most raising, illustrated by the greatest average decrease in F1 before plosives, was found in CL, although CL's raising was only marginally greater before the fricatives in the “lies” / “lice” minimal pair. CL and MV registered almost identical values. In accordance with the *Atlas*’ definition of raising as a difference greater than 60 Hz, the average difference among VI speakers suggests a lack of raising or minimal raising before fricative codas, although they do raise before plosives. Among our participants, Canadian raising was actually greatest among the Americans, with 15 out of 20 CL speakers compared with 11 out of 19 and 9 out of 21 speakers from MV and VI respectively, illustrating that Canadian raising is not unique to the states’ northern neighbours.

Region	Height F1 - Hide F1 (Hz)	Height F2 - Hide F2 (Hz)	Lice F1 - Lies F1 (Hz)	Lice F2 - Lies F2 (Hz)
CL	-142	259	-110	97
VI	-95	307	-52	301
MV	-62	190	-110	93

Table 2

Speakers from all three regions fronted their vowels before the voiceless coda; however, the amount of fronting was greater before the plosive coda than the fricative coda. For both coda types, the average difference was greatest on VI, where 18 out of 21 speakers fronted and there was a similar amount of fronting regardless of coda type. In CL and MV, there was significantly more fronting before the plosive coda, although overall less fronting in MV than in CL, with only 14 out of 19 speakers fronting compared with 17 of 20 CL speakers².

The minimal pairs “cloud” and “clout” as well as “house” (noun) and “house” (verb) are differentiated by voicing of the final consonant. In “clout” and “cloud” the phonological feature distinguishing the two is the voicing in the alveolar plosive in each word's coda position. “Clout” has a voiceless plosive, /t/, in its coda position and cloud has a voiced plosive, /d/, in its coda position. The noun and verb form of “house” are similarly distinguished by the voicing of a final alveolar fricative. These minimal pairs are targeting the MOUTH diphthong /aʊ/ to observe the differences in raising before voiced and voiceless obstruents.

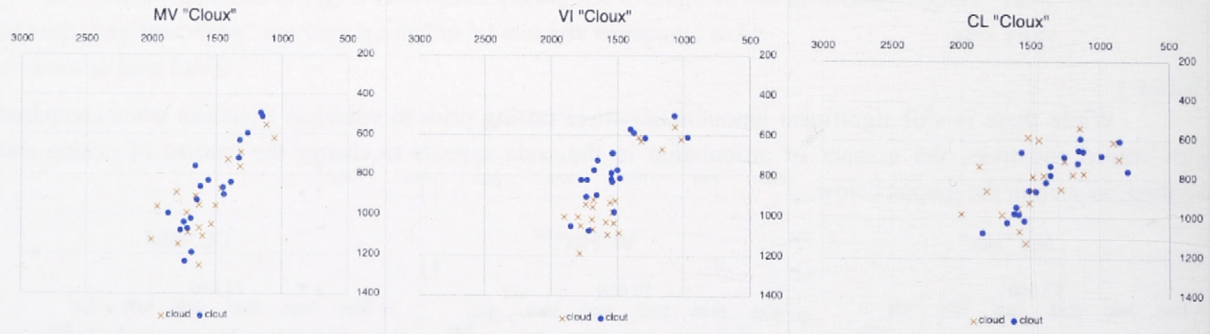


FIGURE 5

Figure 5, showing the distributions of vowels by region shows great overlap in both MV and CL and very little in VI. This suggests that we will find more raising amongst VI speakers than in the cities. None of the regions seem from the graphs to exhibit much fronting or retraction.

Table 3 below contains the data for the averages in the difference in /aʊ/ vowel height and forwardness for each region before voiced versus voiceless alveolar stops.

² See Appendix B for table on the number of speakers who raised by region

Region	Clout F1-Cloud F1 (Hz)	Clout F2-Cloud F2 (Hz)
MV	-60	-37
VI	-142	-20
CL	-2	-90

Table 3

MV English speakers appear to have a preference towards raising the /ao/ diphthong before voiceless obstruents. Canadian raising for /ao/ then seems to be present in today's MV English speakers, although significantly less pronounced than on VI. As well, only 8 of our 19 MV English participants raised the /ao/ in clout so this phenomenon may be limited to few speakers. This is a change from what was observed in the *Atlas of Canadian English* which didn't find Canadian raising to be present in /ao/ in MV. This may be indicating a shift towards Canadian raising among young people, but could also have to do with many of our young MV speakers having parents from elsewhere in Canada who may have influenced the amount of raising speakers use. On VI there is much more /ao/ raising that there is in MV or CL, which is in line with predictions we made based on anecdotal evidence at the beginning of this paper. This is also in line with the acoustic analysis of Victoria done by Rosenfielder in 2005 who found that "despite the various studies predicting the decline and eventual disappearance of Canadian Raising,... it is still very much alive in Victoria some twenty years later." CL had virtually no raising, which follows from data from the *Atlas of Canadian English* and predictions based on anecdotal evidence.

Fronting or retraction of /ao/ between “cloud” and “clout” does not seem to appear in either MV or VI although there does appear to be a tendency to retract before the voiceless obstruent in CL. However, the frontness of /ao/ in both cloud and clout are on average higher and more centralised in MV and VI than in CL (see table 4 below). Chambers’ prediction of a possible disappearance of Canadian raising has not occurred among our participants. However, Chambers' (1981) prediction regarding /ao/ fronting, does appear normal on VI and in MV.

Region	/ao/ F2 means in cloud/clout (Hz)
CL	1391
VI	1533
MV	1551

Table 4

In our audio files, we noticed a tendency not to voice the final /z/ in the verb form of “house.” Although it is possible this is simply a reading error since we did choose a minimal pair that happened to be homonyms in English, many of the devoiced “house”(verb) tokens still seemed to have Canadian raising although the final vowel was realized as being voiceless. 13 VI speakers exhibited raising and 12 exhibited fronting greater than 60 Hz in the noun form compared to the verb form out of 21 total, while only 9 of the VI participants audibly voiced the coda of the verb form. This could suggest that there is devoicing that occurs after the raising for some VI speakers– the contrast between the noun and verb form may have become just a contrast in vowel quality. In any case, we are unable to differentiate between a reading error causing the devoicing or this being an emergent variant. If we look only at the data of speakers who differentiated in the coda position (approximately half of our total), the set is too small to be reliable, and therefore inconclusive.

Although we initially gathered audio samples for our anchoring vowels for the sole purpose of normalizing the data, we did notice interesting contrasts between our three speaker groups worth discussing. While the back vowels LOT and GOOSE were quite similar for speakers in all of our regions, there were quite significant differences in the front vowels BATH and FLEECE, as shown below.

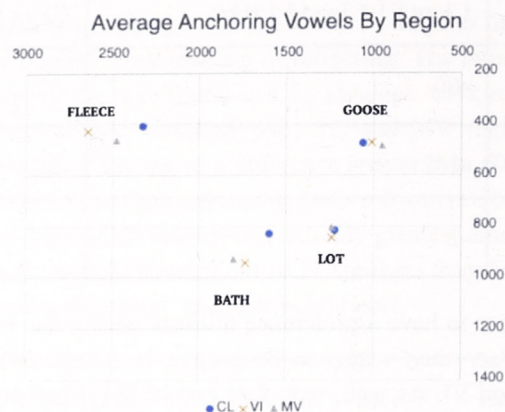


FIGURE 6

One reason may be that in CL, some speakers articulated the BATH vowels as a diphthong, whereas speakers from MV and VI did not. In terms of the LOT vowel, we measured this using the terms “caught,” “stop,” and “talk.” These vowels are pronounced alike by the majority of the MV and VI speakers, although they are typically pronounced differently by CL speakers, who pronounce “caught” and “talk” with the same vowel /ɔ/ but “stop” with a different vowel /ɑ/. This is reflected in the lack of the caught-cot merger among these midwestern speakers.

5 Conclusion

As we recorded formant data in Praat, it was interesting to see the amount of change in F1 and F2 within vowels, and we imagine that further research looking at both the nucleus and the glides of diphthongs could illuminate even greater differences between CL speakers and their MV and VI peers.

Another noteworthy area for further study would be the devoicing of /z/ in “house” when used as a verb. Many of the speakers who devoiced the final consonant still raised the vowel in “house” the verb but not “house” the noun, leading us to believe that this could be more than a simple reading error.

Also, the extent to which “bag” and “beg” are distinguishable in VI English can be further studied. Over the course of the data collection process the researchers who do not have the bag-beg merger learned to reliably identify which word was which when played in isolation, suggesting that the vowels are in some way distinguishable, despite having nearly identical height and backness measures. Perhaps this distinguishing factor could potentially be a variable such as vowel length which we did not examine.

In general, this study illuminates the diversity of Canadian English. Not only is it distinct from American dialects, but it is also unique within the province of British Columbia. Our initial hypothesis that /aɪ/ raising and /æ/ raising before /ŋ/ would occur in all regions was in line with the data we collected, as was our hypothesis that /æ/ would raise before /g/ in VI and MV but not CL. We saw fronting and retraction in all vowels we looked at, which we had not specifically predicted. We also correctly hypothesized that /ao/ raising would not occur among speakers from CL; however, we were incorrect in our assumption that it would occur in both VI and MV. In actuality, there was only significant raising among Islanders.

- Avis, W. S. (1973). The English language in Canada. *Current trends in linguistics*, 10, 40-74.
- Benor, S. (2018). Jewish English in the United States. *Languages in Jewish Communities, Past and Present*, 414–430. <https://doi.org/10.1515/9781501504631-014>
- Chambers, J. K. (1973). Canadian raising. *Canadian Journal of Linguistics/Revue Canadienne De Linguistique*, 18(2), 113–135. <https://doi.org/10.1017/s0008413100007350>
- Chambers, J. K. (1989). Canadian raising: Blocking, fronting, etc.. *American Speech*, 64(1), 75. <https://doi.org/10.2307/455114>
- Chambers, J.K. (2006). Canadian Raising Retrospect and Prospect. *The Canadian Journal of Linguistics / La revue canadienne de linguistique* 51(2), 105-118. doi:10.1353/cjl.2008.0009.
- Davison, J. (1987). On saying/ao/in Victoria. *Toronto Working Papers in Linguistics*, 7.
- Labov, W., Ash, S., & Boberg, C. (2006). *Atlas of North American English phonetics, Phonology and Sound Change*. Mouton de Gruyter.
- Labov, W., Ash, S. & Boberg, C. (2008). *The Atlas of North American English: Phonetics, Phonology and Sound Change*. Berlin • New York: De Gruyter Mouton. <https://doi-org.proxy3.library.mcgill.ca/10.1515/978311016746>
- Rosenfelder, I. (2007). Canadian Raising in Victoria, B.C.: An Acoustic Analysis. *AAA:Arbeiten Aus Anglistik Und Amerikanistik*, 32(2), 257–284. <http://www.jstor.org/stable/26430850>
- Vancouver Island. (2020). *New World Encyclopedia*. Retrieved 16:08, November 13, 2022 from https://www.newworldencyclopedia.org/p/index.php?title=Vancouver_Island&ol did=1040198.

Appendix A

Word/Sentence Lists Anchor Vowels:

See, Feet, Keep, Sat, Gap, Had, Pool, Fool, Rule, Stop, Caught, Talk

Sentences containing minimal pairs.

1. She has a lot of **clout**.
2. There is nowhere to **hide**.
3. They live in a **house**.
4. The child has **lice**.
5. The building reaches an impressive **height**.
6. He lost his **bag**.
7. Look at that **cloud**.
8. We have to come **back**.
9. They were difficult to **house**.
10. The dog will start to **beg**.
11. I'm sick of your **lies**. 12. I heard a loud **bang**.

Appendix B

House(n) (includes unvoiced House (n))

Region	Raised	Lowered	Retracted Fronted	
CL	6/20	2/20	10/20	6/20
VI	12/21	2/21	13/21	3/21
MV	9/19	2/19	5/19	4/19

Clout

Region	Raised	Lowered	Retracted Fronted	
CL	4/20	5/20	10/20	4/20
VI	16/21	1/21	7/21	4/21
MV	8/19	2/19	8/19	2/19

Lice

Region	Raised	Lowered	Retracted Fronted	
CL	9/20	1/20	5/20 10/20	
VI	9/21	2/21	1/21 17/21	
MV	12/19	0/19	5/19 11/19	

Height

Region	Raised	Lowered	Retracted Fronted	
CL	15/20	0/20	2/20 17/20	
VI	11/21	1/21	1/21 18/21	
MV	9/19	1/19	1/19 14/19	

The Grammaticalization of Motion Verbs into Directionals in Chol

Marie-Sophie Aubé

Department of Linguistics, McGill University
LING 410: Structure of a Specific Language 1
Professor Jessica Coon

Abstract

Grammaticalization is a process by which a lexical item develops a grammatical function. It is a slow and continuous cross-linguistic process. The transition from a lexical to a grammatical item would happen in a chain of overlapping processes where it is generally assumed that conceptual change would precede form change. Chol, amongst other languages, exhibits signs of grammaticalization as the motion verbs become directionals. This paper refers to two models, Hoder 2022 and Heine 1993, used to describe and define the processes used in grammaticalization. Based primarily on these previous works, this paper establishes that most Chol directionals were less advanced in the grammaticalization process with the two most common directionals, ‘toward’ and ‘away’, being more advanced.

1 Introduction

This paper will consider the grammaticalization process of motion verbs into directionals. Parallely, it will establish the degree of grammaticalization of directionals in Chol, a Mayan language spoken in Mexico. While the literature lacks to provide a specific definition for directionals, they are generally described as elements that indicate or specify the trajectory of the main predicate in a clause in semantic and functional properties rather than in morphosyntactic terms (Hoder 2022:92).

In Chol, directionals are derived from eleven intransitive verbs of motion. As shown in Table 1 below, the directionals are formally derived by adding the non-finite suffix *-l* to the root of the motion verb (Vazquez, 2011:165). In this language, all intransitive motion verbs were turned into directionals. Other languages like Mam also share this characteristic, but for others, like K’iche’, not all intransitive motion verbs are grammaticalized into directionals (Hoder 2022:164).

	Motion Verbs	Directionals
1	majl ‘to go’	majl-e(l), maj-a, ma ‘away’
2	tyäl ‘to come’	tyäl-e(l), ty-el, t-el, t-e ‘toward’
3	k’oty ‘to arrive there’	k’oty-e(l) ‘here to there’
4	jul ‘to arrive here’	jul-e(l) ‘there to here’
5	ñäm ‘to pass’	ñäm-e(l) ‘pass by’
6	sujty ‘to return’	sujty-e(l) ‘return’
7	käyty ‘to stay’	käyty-ä(l) ‘remain’
8	och ‘to enter’	och-e(l) ‘in’
9	lok’ ‘to exit’	lok’-e(l) ‘out’
10	lets ‘to climb’	lets-e(l) ‘up’

11	ju'b 'to descend'	ju'b-e(l) 'down'
----	-------------------	------------------

Table 1: Intransitive verbs to Directionals. (Vazquez 2011:165; Hoder 2022:146)

Chol directionals are considered a minor word class, like pronouns, prepositions, etc. (Vazquez 2011:145) They appear post verbally and are the last element of the verbal complex. Across Mayan language, directionals can appear in chains. For example, Akateko (Zavala 1994:109) allows for up to three directionals to be chained up. Chol allows for two chained directionals, but, as you can see in (1) and (2)³, in these cases the last member needs to be either *majlel* 'away' or *tyälel* 'toward', which are the two most frequently used directionals. (Vazquez 2011:168)

- | | | | | |
|-----|---|----------------|-------------|----------------------|
| (1) | tyi | i-kuch-u-ø | lok'-el | majl-el ⁴ |
| | PRFV | A3-carry-TV-B3 | DIR:out-NF | DIR:away-NF |
| | 'He carried it away (e.g. departing from a house).' | | | |
| | | | | |
| (2) | tyi | i-chok-o-ø | ju'b-el | tyäl-el |
| | PRFV | A3-carry-TV-B3 | DIR:down-NF | DIR:toward-NF |
| | 'He threw it down toward here.' | | | |

As can be observed from Table 1, the directionals, *majlel* 'away' or *tyälel* 'toward', exhibit various reduced forms which occur in free variation. Such phonological erosion is typical evidence of grammaticalization. (Vazquez, 2011) This kind of evidence is why it is intriguing to analyze how the grammaticalization process has influenced motion verbs and directionals in Chol.

Spatial orientation seems to have a prominent role in Mayan languages (Hoder 2022:91). This is reflected in the grammar through the use and presence of auxiliaries and directionals to represent space more accurately in the grammar (Haviland 1993:47). Section 2 of this paper will explain grammaticalization models and properties found in Heine 1993 and in Hoder 2022. In section 3, I will discuss how these concepts relate to Chol directionals and try to establish their general (weaker/stronger) degree of grammaticalization.

2 Grammaticalization

The view on grammaticalization I will adopt is described in Hoder 2022 and Heine 1993. Hoder's publication represents a thorough examination of the grammaticalization process in various Mayan languages going more in depth than any other article I was able to find, and she expands upon Heine's original work. According to her, grammaticalization is a process where, in certain linguistic contexts, lexical items and constructions begin to develop and serve certain grammatical functions. (Hoder 2022:17) The cross-linguistic process is gradual and unidirectional.

Moreover, it is stated that conceptual changes would precede form change when lexical items are transitioning to grammatical ones (18). This process, called a grammatical chain, is a structure of overlapping stages of the lexical to grammatical development of linguistic entities (23).

Similarly, Heine (1993:54) defines an Overlap Model for grammaticalization composed of four successive grammatical chains relating to different aspects of linguistic behaviors: 1) desemanticization, 2) decategorialization, 3) cliticization, and 4) erosion. Each process will be addressed over the next subsections.

Based on Diwald (2008) and Lehmann (1985), Hoder (2022:24) defines six processes to describe the formal change of grammaticalized items and classify degrees of grammaticalization. In the following table, I

³ Glosses are: A=Set A (ergative, possessive); B=Set B (absolutive); DET=determiner; DIR=directional; DT=status marker for positional in imperfective; EP=epenthesis; IMPF=imperfective aspect; IV=status marker for intransitive verb in imperfective; NF=non-finite suffix; PART=participle; PIMFV=status marker for positional in imperfective; PL=plural; PLEXC=plural marker for first person exclusive; PPRFV=status marker for positional in perfective; PRFV=perfective, REL=relative pronoun; STAT=stative suffix; TV=status marker for transitive verb in perfective.

⁴ All examples are from Vazquez Alvarez 2011, unless specified otherwise.

attempted to associate the processes presented in Heine 1993 with the parameters presented in Hoder 2022 (as you can see in the last column). This will allow me to map Chol directionals on weaker or stronger degrees of grammaticalization.

Parameter	Weak grammaticalization	Process	Strong grammaticalization	Approximative Corresponding Concept(s) in Heine 1993
Paradigmaticity	Source items are loosely part of a semantic field	Paradigmaticization	Target items will come to fill mutually exclusive syntactic roles	Desemanticization
Paradigmatic variability	Source items can be used freely in communications	Obligatorification	Use of the target items will be systematically constrained and obligatory	Decategorialization Desemanticization
Scope	Source items can relate to complex constituents	Condensation	Target item will come to only modify a word or stem	Decategorialization
Bondedness	Source item can stand as an independent word	Coalescence	Target item will need to be affixed or even a phonological feature of the main verb	Cliticization Erosion
Syntagmatic variability	The item can initially appear in various place in the clause	Fixation	Target will be restricted to a specific slot	Cliticization
Integrity	Source items are often polysyllabic and have many semantic features	Attrition	The items will lose semantic features and morphemes to only retain a few or one	Desemanticization Erosion

Table 2: Parameters and processes of grammaticalization (Hoder 2022:24)

2.1 Desemanticization

Desemanticization is the process by which a source will be stripped of its semantic content to acquire its target form. In the event of grammaticalization, this process is defined by Heine (1993:54) in three stages. In its initial state, the source conveys a concrete lexical concept. After losing some of this concrete content, it shifts toward the more abstract meaning of the target and acquires a grammatical function. As Hoder (2022:18) mentions, recent studies have been framing the conceptual change with polysemous meanings. The chain of related meanings and uses is a gradient of more lexical to more grammatical meanings. Then, the semantic shifts would depend on a reanalysis of the form-meaning content, rather than content being stripped from the lexical item. This proposes a much more gradual process of conceptual change. While I cannot determine which of these models would be most accurate, I tend to lean more with Hoder 2022 who provides a more precise explanation for these processes Heine’s desemanticization process would generally correspond to the first three

processes in Hoder 2022 (paradigmaticization, obligatorification, and condensation) given that these three processes are also related to the paradigmatic axis and conceptual shifts.

2.2 Decategorialization

The term decategorialization refers to the process by which words undergoing grammaticalization will tend to lose morphological markers and syntactic characteristics that are normally associated with their initial lexical category. Heine (1993:55) denotes stages of decategorialization. In its source form, the verb has a full verbal morphosyntax. It will then lose certain verbal properties, like the ability to inflect for aspect, to be negated, or occur in other position in the clause. Target form would be obtained once the verb has lost virtually all its verbal properties. Hence, as a verb is grammaticalized, it loses lexical content to adopt grammatical content (Heine 1993:55). Similarly, Hoder (2022:23) refers to the process as recategorization.

2.3 Cliticization

Cliticization is the process through which the source will become a morphophonological appendix to its complement. In its source form, the lexical item, in this case the verb, is an independent word. After losing its status as an independent word, the verb develops into a clitic. If it is further grammaticalized, the verb could develop into an affix. It is also possible that the developing clitic does not merge with the main verb. In that case, the directional could potentially attach to another constituent or become an independent word, like an adverb (Heine 1993:56).

2.4 Erosion

The process of erosion, as defined in Heine 1993, is also a sign of grammaticalization. As words are grammaticalized, they may lose some of their phonological substance (Heine 1993:56). The general observation is that grammaticalized forms tend to be shorter than lexical ones. Looking at Table 2 on Hoder's properties, erosion could be part of bondedness and integrity.

3 Discussion: Directionals in Chol

With a better understanding of grammaticalization, we can now analyse how the processes are exhibited in Chol. Through the concepts listed in Table 2, I will be able to establish a general idea of the degree of grammaticalization (weak or strong) in Chol directional.

Motion verbs typically express the movement or trajectory of a figure. Once grammaticalized, those semantic properties shift and the directionals may retain only a schematic meaning of the motion verbs (Hoder 2022:143). As seen previously, this process is called desemanticization. In Chol, we can observe that the combination of a non-motion verb and a directional will not imply literal movement of the referent, which should be the case if directionals retained the same meaning as the motion verbs (147). This is exemplified in (3) and (4) where the directionals *tyälel* and *majlel* still infer a sense of movement to the clause but not a literal meaning of a referent moving toward something.

(3) ch'äjä-em-oñ tyäl-el
get.sad-PART-B1 DIR:toward-NF
'I came sad.'

(4) buch-ul-oñ majl-el
seat-STAT-B1 DIR:away-NF
'I go seated.'

This is something also observed by Haviland (1993:42) in Tzotzil directionals. He notes that the sense of motion seems to be inferred rather than coming from the syntax, particularly since directionals have no nominal argument. Hence, the semantic movement acts as an adverbial augmentation of the clause's event.

In the Cholan-Tzeltalan family, all directionals encode a sense of motion. The most frequent directionals are deictically anchored (Hoder 2022:145). This is also the case in Chol where *majlel* 'away' and *tyälel* 'toward' reference a motion toward or away from a deictic point. The other nine directionals indicate orientation without deixis (Vazquez 2011:223). Since main verbs of motion are also not deictically oriented, I propose that this semantic development in *majlel* and *tyälel* could be an instance of paradigmaticization, hence making those two directionals mutually exclusive. This could be further evidence that *majlel* and *tyälel* are more grammaticalized than the other directionals. However, while I did not find any example proving or disproving this hypothesis, it would be interesting to ask Chol speakers if constructions stringing *majlel* and *tyälel* one after the other would be grammatical. If this were possible, my hypothesis of paradigmaticization and mutual exclusivity would fail.

On the topic of decategorialization, Heine notes: "once a given expression is transferred from source concept to target concept, that is, from denoting a verb to carrying a grammatical function, it loses its properties characteristic of its former category" (Heine, 1993, p.50). This is observable in Chol in many ways. First, as motion verbs are grammaticalized into directionals, they lose their ability to inflect. The motion verbs listed in Table 1 typically take aspect and person markers. As intransitive verbs, they also receive the status marker *-i* in the perfective aspect, except for *käyty* 'to stay' since it is derived from a positional (Vazquez 2011:166). In (5) and (6), you can see examples of conjugated motion verbs in (a) and the corresponding directionals in (b).

- (5) a. tyi k'oty-i-y-oñ=loñ
PRFV arrive.there-IV-EP-B1=PLEXC
'We arrived there.'
- b. mi' i-kuch-ø-o' k'oty-e(l) li tye'=bä
IMFV A3-carry-B3-PL3 DIR:here.to.there-NF DET wood=REL
'They carry the wood there.'
- (6) a. ya=x tyi käy-le-y-ø-o'
there=already PRFV stay-PPRFV-EP-B3-PL3
'They already stayed there.'
- b. tyi i-pul-b-e-ø **käy-ty-äl** ich
PRFV A3-burn-APL-DT-B3 DIR:remain-PIMFV-NF chili
'(to the owl) He left chilis burning.'

Based on the position they take in clauses, Chol directionals are restricted to post-verbal slots and need to be the last member of the verb phrase (Vazquez 2011:165,223). This is also something Haviland (1993:46) notes on auxiliaries and directionals in Tzotzil. He qualifies this behavior as clitic-like. In (7), we see the correct position of a directional and in (8) the sentence is ungrammatical since *ochel* is not right after the main verb.

- (7) Tyi i-chok-o-ø och-el jiñi tyuñ
PRFV 3A-carry-TV-B3 DIR:in-NF DET rock
'He threw the rock'
- (8) *Tyi ichoko jiñi tyuñ ochel
Intended meaning: 'He threw the rock.' (Coon, 2022:8)

Cliticization does not seem to be at an advanced stage in Chol. While the directional has become an independent word and is distinct from the motion verb, it still has not developed into a clitic, or even further grammaticalized into an affix. However, Heine does mention that such developments are not obligatory (Heine 1993:56). In the same way, I observe that Chol directionals are not yet completely bound to the main verb, which shows less boundedness, but they are fixed to a specific slot showing weaker syntagmatic variability and, so, are more grammaticalized (Hoder 2022:24).

Similarly, the two most used directionals *majlel* ‘away’ and *tyälel* ‘toward’ exhibit various degrees of phonological erosion. ‘Away’ can surface in three ways: *majle(l)*, *maj-a*, and *ma*. ‘Toward’ can surface in five ways: *tyä-e(l)*, *tyäl-e*, *ty-el*, *t-el*, and *t-e* (Hoder 2022:146). Higher degree of phonological erosion also has to do with cliticization. In Hoder’s concept that is equivalent to bondedness, where target items become affixed to the main verb, and integrity, where the target word loses some semantic and morphemic features. Both of which are observed with the two preceding Chol directionals.

Heine (1993) mentions that, by eroding, the grammaticalized item becomes dependent on surrounding phonetic material. He continues that “[s]ince grammaticalization affects only certain uses and contexts of that lexeme, erosion tends to be confined to such contexts while the lexeme is retained in its full form in other contexts.” (Heine, 1993:106-107) Based on this, we would assume that the eroded forms of *majlel* and *tyälel* should be restricted by certain contextual or syntactic constraints, but the data available thus far shows that they appear in free variation (Hoder 2022:146). This suggests that the grammaticalization of those two directionals is not complete. Overtime, a constrained use of the eroded forms may appear. It is also important to note that the nine less-eroded directionals might be showing signs that they will erode more overtime since the last consonant *-(l)* is already optional.

4 Conclusion

To conclude, this paper summarized the various processes of conceptual and formal changes that arise in grammaticalization chains. I particularly focused on four concepts presented in Heine 1993: desemanticization, decategorialization, cliticization, and erosion. To map Chol directionals on weaker or stronger degrees of grammaticalization, I also used six parameters (and processes) presented in Hoder 2022: paradigmaticity (paradigmaticization), paradigmatic variability (obligatorification), scope (condensation), bondedness (coalescence), syntagmatic variability (fixation), and integrity (attrition). With this background knowledge, I analyzed Chol directionals. In the grammaticalization process, they would lose some semantic content of the motion verb, but not all as directionals still inferred movement. Upon my observations, I proposed that *majlel* and *tyälel* once deictically anchored, might become mutually exclusive (paradigmaticization) which would be more evidence for their stronger grammaticalization. All Chol directionals have lost their status as verbs since they can no longer inflect and are fixed (weak syntagmatic variability) in a specific position in the clause. Cliticization is weaker but still apparent since directionals must occur after the verb (close to it). By looking at erosion, it was obvious that *majlel* and *tyälel* are more advanced in the grammaticalization process than their peers, who might, however, be on their way toward more phonological erosion. It would be interesting and insightful to compare the grammaticalization of Chol directionals with that of other Mayan languages in more depth. It might allow us to create a more specific Model for the degrees of grammaticalization than the one I was able to use in this paper.

References

- Coon, Jessica. 2022. "Complex Predication." Handout for LING 410, November 8 & 10, 2022.
- Haviland, John B. 1993. The syntax of Tzotzil auxiliaries and directionals: The grammaticalization of 'motion'. Berkeley Linguistics Society 19. 35–49.
- Heine, Bernd. 1993. *Auxiliaries : Cognitive Forces and Grammaticalization*. New York: Oxford University Press.
- Hober, Nicole. 2022. *Grammaticalization and Variation : The Case of Mayan Motion Verbs*. *Studia Typologica : Beihefte / Supplements Stuf - Sprachtypologie Und Universalienforschung / Language Typology and Universals*, Volume 28. Berlin: De Gruyter Mouton.
- Vázquez Álvarez, Juan Jesús. 2011. *A grammar of Chol, a Mayan language*. Austin: University of Texas at Austin PhD thesis.
- Zavala Maldonado, Roberto. 1994. "Se les está 'moviendo' el tapete: Gramaticalización de verbos de movimiento en akateko." In Zarina Estrada (ed.), *Memorias del II Encuentro de Lingüística en el Noroeste*, Vol. 2, 101–144. Hermosillo: Universidad de Sonora.

On Topics in Itzaj

Alison Yu

Department of Linguistics, McGill University
LING 410: Structure of a Specific Language I
Professor Jessica Coon

Abstract

The 1992 paper “Topic and Focus in Mayan” by Aissen categorized Mayan topics into external topics and internal topics. This paper attempts to determine if Itzaj topics are external or internal, or if it contains both types of topics. It also investigates if clause final topics could exist as external or internal topics in the language. By drawing data from Itzaj and other Mayan languages, the paper concludes that internal topics exist in Itzaj. The presence of external topics is not proven due to lack of relevant data. It can be inferred that Itzaj may contain external topics as Yucatec, a language closely related to Itzaj, has both external and internal topics. Clause-initial and clause-final topics are both allowed in internal topics in Itzaj. However, that of external topics are again unable to be proven.

1 Introduction:

The goal of this paper is to determine the presence of external topics or internal topics in Itzaj, and if clause final topics could exist as external or internal topics in the language. The analyses of external and internal topics will be based on the classifications by Aissen (1992). The discussion on clause-final topics will be based on the hypothesis suggested in Clemens and Coon 2018. Itzaj is a Mayan language spoken in Guatemala. It has 410 native speakers and 1000 total users as of 2019. It is marked as a ‘dying’ language as native speakers of Itzaj are of the age of grandparents, and that the language can no longer be acquired naturally at home (Eberhard et al., 2022).

Itzaj is rich in its variations of word order and allows the use of topics and foci to highlight important noun phrases in a sentence (Hofling, 2000).

Section 2 talks about the background of the puzzle. It includes information on word order, topics, and foci in Mayan languages, and introductions to the ideas of external and internal topics and clause-final topic. Section 3 analyzes how only internal topics are found in Itzaj and discusses clause-final topics in the language. Finally, Section 4 gives a conclusion of the essay and ideas for future projects. Examples listed in this essay are adapted for consistency.

2 Background

2.1 Word order in Mayan languages and Itzaj

Mayan languages are typically verb-initial (Clemens & Polinsky, 2017). According to England 1991, the basic word order of Mayan languages can be divided into two categories. They are either rigidly VOS or an alternation between VOS and VSO. Rigid VOS languages are often stricter and block some combinations of word orders. In contrast, the rest of the Mayan languages usually allow all possible word orders to exist in their languages (England, 1991).

Based on the classification by England (1991), Itzaj belongs to the category of having both VOS and VSO as basic word orders, since it allows all six possible combinations of verb, object, and subject to exist. However, Hofling (2000) claimed that Itzaj has the basic word order of VOS, with SVO also being a common word order. (1) is an example of the word order VOS and (2) is an example of the word order SVO.

- (1) k-u-kin-s-ik b'alum a'winik-ej.
 INC-3A-die-CAUS-ITS jaguar DET-man-TOP
 ‘The man kills jaguar(s).’

(Hofling 2000; p. 190)

- | | | | | | | |
|-----|-----|---------------------------------|-----|-------|---------------|-----------------------|
| (2) | i | la'ayti'-oo' | ma' | patal | u-b'et-ik-oo' | ... mix=b'a'al |
| | and | 3IPR-PL | NEG | ABIL | 3A-do-ITS-PL | NEG=thing |
| | | 'and they couldn't do anything' | | | | (Hofling 2000; p.193) |

2.2 Topics and Focus in Mayan languages and in Itzaj

While sentences in Mayan languages are usually presented as verb-initial, highlighted noun phrases are sometimes fronted to the position before the verb. Topics and foci are both markers to highlight noun phrases and both of them are seen across most Mayan languages. When they exist in the same clause and are both being fronted, the topic usually resides in the place before the focus (Aissen, 1992). Aissen (2017) differentiates the two information structures by the example seen in (3).

- (3) a. Where is Mary driving tomorrow?
 b. Mary is driving to Prague tomorrow.
 i. Focus-Background: Mary is driving to [FOC Prague] tomorrow.
 ii. Topic-Comment: [TOP Mary] is driving to Prague tomorrow (Aissen 2017;p.309)

In this case, 'Mary' would be the topic and 'Prague' would be the focus. Aissen (2017) explained that the two functions work in different dimensions. 'Mary' would be topicalized as it is the entity that is being talked about. 'Prague' would be focused as it is the greatest point of informativity. The background of 'Mary is driving somewhere tomorrow' is already known. Topics are part of the background while being contrasted with the comment. On the other hand, foci contrast with the background while being part of the comment.

Hofling (2000) offered a different kind of classification for topics and foci in Itzaj. He claimed that topics highlight given or accessible information, while foci highlight new, contrastive information. This explanation could also be applied to the example in (3), where 'Mary' is the topic and 'Prague' is the focus. 'Mary' was already given in the question, and 'Prague' was newly introduced in the reply. Hofling (2000) also suggested that noun phrases that are topicalized and focused should be fronted, i.e., they should be moved in front of the verb. However, this is not always the case in the examples provided in Hofling 2000, which may provide evidence for clause-final topics. Topics are marked with the suffix -e or -ej in Itzaj, while foci do not require any markers. (4) is an example where the third person plural subject is topicalized, and the object 'shaman' is focused in (5).

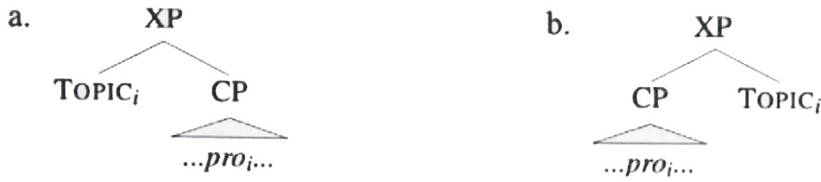
- | | | | | | | |
|-----|--|-----------|-----------------|-----------------------|-----------------------|---------------------|
| (4) | la'ayti'-oo'-ej | k'och-oo' | et-el ak'ä'. | | | |
| | 3IPR-PL-TOP | arrive-PL | with-POS night | | | |
| | 'They arrived at night.' | | | (Hofling 2000; p.333) | | |
| (5) | i aj-waay | je'-loj | ... t-u-b'et-aj | .. tz'ak | wal | ti a' b'a'alche'-ej |
| | and MASC-sorcery | OST -DIST | COM-3A-do-cTS | spell | perhaps | to DET animal-TOP |
| | 'and it was that shaman who made a spell on the animal, perhaps' | | | | (Hofling 2000; p.195) | |

2.3 External and Internal Topics

The notion of internal and external topics was developed by Aissen (1992). Aissen (1992) claimed that topics in Mayan languages can be divided into two categories, external and internal. Tsotsil and Jalkatek have external topics, while Tz'utujil has internal ones. It was hypothesized that the two kinds of topics are inherently different, as external topics are base generated outside of the CP, while internal topics are generated inside the CP, where it is then moved up in the tree. Aissen (1992) raised several evidence to how the topics are different. External topics often require enclitics after the noun phrase. They also tend to have an intonational pause between the noun phrase and the rest of the sentence. Since external topics are generated outside of the CP, these topics are not allowed inside an embedded phrase. It was also pointed out that external topics can be doubled by a pronominal element. (6) is an example of an external topic in Tsotsil. The subject *vinik* 'man' in (6)b and the subject *antz* 'woman' in (6)c are being topicalized. The topics are opened by the topic marker *a* and closed by the enclitic *-e*.

- (6) a. There was a man and a woman, newlyweds.
 b. a ti vinik-e ta=xlok' ech'el, ta=xbat ta=xxanav.

(11) Clause-initial and clause-final external topics



3 Analysis

3.1 Internal topics in Itzaj

In order to prove the presence of external or internal topics in Itzaj, this paper would search for several distinct features of the two categories. To prove that there are external topics in Itzaj, the examined sentence should either contain an intonational pause, i.e., a comma after the topicalized noun, or contain a doubled pronominal element. To prove the existence of internal topics, the examined sentence should either have a topic inside an embedded clause, or have a third person pronoun topicalized. The paper Hofling 2000 is utilized in this essay as the database for Itzaj sentences.

It is discovered that Itzaj allows internal topics. In the example (12), the subject in the clause *b'alum* 'jaguar' is being topicalized while residing in an embedded clause. It is also being fronted before the verb. The subject *mak-oo* 'the people' is being topicalized in (13). It is also inside an embedded clause but was not fronted. There were no instances of a third person pronoun topic found. Since Itzaj is a pro-drop language, it could be hypothesized that these instances could be legal but rarely exist.

- (12) [_{TOP} Aj-Jwan-ej] t-uy-il-aj [_{CP} ke [_{TOP} a' b'alum-ej] t-u-kin-s-aj aj-Juulyoj.]
 MASC-PN-TOP COM-3A-see-CTS SUB DET jaguar-TOP COM-3A-die-CAUS-CTS MASC-PN
 'Juan saw that the jaguar killed Julio.' (Hofling 2000; p.497)
- (13) La'ayt a'-lo' [_{CP} u-k'a't-ij a' mak-oo'-ej] ...
 3IPR DET-DIST 3A-want-TS DET person-PL-TOP
 'It is that, that the people want,' (Hofling 2000; p.483)

Itzaj topics also bears resemblance to the internal topics in Tz'utujil than to Tzotsil or Jakalteek. It has no enclitics nor intonational pauses. Additionally, being inside embedded clauses suggests that the topicalized noun phrase is 'closer' to the rest of the sentence, which supports the idea that topics are generated inside the CP.

However, there is no evidence to the presence of external topics in Itzaj. No instances were found to contain an intonational pause or a doubled pronominal element. Nevertheless, the possibility of external topics in Itzaj cannot be ruled out. Yucatec, another language in the Yucatecan family, was found to contain both external and internal topics, which would be discussed in the next section (Eberhard et al., 2022).

3.2 Topics in Yucatec

Gutiérrez-Bravo (2011) claimed that Yucatec contains both external and internal topics. The rules concluded by Aissen (1992) were utilized to determine the types of topics that exists in Yucatec. The example shown in (14) suggests that the topic, *áak=e* 'turtle', has an intonational pause after it, which is represented by a comma. (15) demonstrates the phenomenon of a second pronominal element, with the subject *le ah koonol-o* 'the master seller' repeating before the third person subject *leti*. Both examples are representative of external topics in Yucatec.

- (14) Le áak=e', t-u jaan-t-aj-ø su'uk.
 DET turtle=TOP CP-3A eat-TRNS-PRF-3SG.B grass
 'The turtle ate grass.' (Gutiérrez Bravo 2011; p.111)
- (15) Le ah koonol-o', leti' tun y-áalkab.

DET master seller-CL 3SG DUR.3A EP-run
 'The vendor, he's running.'

(Gutiérrez Bravo 2011; p.112)

Internal topics are also apparent in Yucatec. (16) demonstrates the topicalization of the third person pronoun *leti*. (17) shows that Yucatecan topics can exist inside embedded clauses.

- (16) Pero *leti*=e' k-u p'áat-al te' jool-o'.
 but 3SG=TOP HAB-3A stay-IND LOC door-CL
 'But she would stay at the door (of the corral).' (Gutiérrez Bravo 2011; p.113)

- (17) U ts'o'ok ka in w-a'al-ø teeche-e' [CP [TOP le tiempo táan
 3A end COMP 1A EP-say-3SG.B 2SG-CL. DM time DUR
 u meen-t-ik-ø]=o', [TOP kan taa-k-ø]=e',
 3A do-TRNS-IND-3SG.B=CL when come-IRR-3SG.B=TOP
 táan u jats'-ik-en].
 DUR 3A beat-IND-1SG.B
 'Lastly, I'll tell you that at that time when he used to do it (get intoxicated), when he came (back home),
 he would beat me.' (Gutiérrez Bravo 2011; p.114)

As Yucatec and Itzaj both belong to the Yucatecan family, it is possible that the two languages may share some similar characteristics. Since Yucatec was found to contain both external and internal topics, it is likely for Itzaj to be identical in this aspect. Some of the sentences found in Hofling (2000) that are not in embedded clauses may well be external topics, but this essay is unable to prove it.

3.3 Clause final topics in Itzaj

To prove that clause-final topics can be internal, an Itzaj topic should be inside an embedded clause while being positioned at the end of the clause. Itzaj has ample evidence on this matter. The examples below show that clause-final topics do appear in embedded clauses, suggesting that clause-final internal topics exist in Itzaj. The subject *b'alum* 'jaguar' is being topicalized in (18). The word order is VOS, suggesting that the topic has not been fronted and is therefore a clause-final topics. (18) proves that clause-final topics exist in Itzaj. The subject *che* 'tree' is being topicalized in (19). It is inside an embedded clause, and the word order of the clause is VO, with the subject *pro* dropped. As the topic is inside an embedded clause, it could be inferred that it is generated inside the CP and therefore qualify as an internal topic. It proves that Itzaj contains clause-final internal topics. It was established in the last section that there is no evidence of external topics in Itzaj. As a result, there is no way of knowing whether they could be clause-final.

- (18) K-uy-il-ik a' winik a' b'alum-ej.
 INC-3A-see-ITS DET man DET jaguar-TOP
 'The jaguar sees the man.' (Hofling 2000; p.191)
- (19) T-u-täk'a'-t-aj-en [CP ka' nak'-äk-en t-a' [TOP che'-ej.]]
 COM-3A-order-TRN-CTS-1SG.B SUB ascend-DIS-1SG.B to-DET tree-TOP
 'He ordered me that I climb the tree.' (Hofling 2000; p.490)

Clause-initial and clause-final topics are found both inside and outside of embedded clauses. It can be theorized that the topicalized noun phrases move to Spec, CP in both cases, only to different sides of the syntax tree. No pattern was discovered to determine whether the topic would be clause-initial or clause-final. Interestingly, of the Itzaj data presented in Hofling (2000), it seems that clause-final topics occur slightly more often in embedded clauses than those outside of the clauses. As Itzaj prioritizes its noun phrases according to animacy and definiteness, it could be theorized that the topicalized noun phrases may be 'fronted' or 'backed' according to these two features. However, more data is needed to investigate this matter.

4. Conclusion

In conclusion, it is discovered that Itzaj allows both clause-initial and clause-final internal topics. Due to the lack of relevant data, the presence of external topics in Itzaj is unable to be proven. Since Yucatec, a Mayan language that is in the same language family as Itzaj, contain external topics, it is possible to speculate that there may be external topics in Itzaj. Itzaj allows both clause-initial and clause-final topics. However, the method of categorization is not found. In terms of further research, more data is needed to determine whether there are external topics in Itzaj. If an Itzaj sentence is found to adhere to any of Aissen's (1992) rule for external topics, the hypothesis could then be proven. To determine the differentiation of clause-initial and clause-final topics, interviews could be conducted with native speakers. Native speakers could determine if the sentence is still grammatical if the clause-initial topic is switched to a clause-final position, or vice versa.

References:

- Aissen, J. L. (1992). Topic and Focus in Mayan. *Language*, 68(1), 43–80.
<https://doi.org/10.2307/416369>
- Aissen, J. (2017). Information structure in Mayan. In J. Aissen, N. C. England & R. Z. Maldonado (Eds.), *The Mayan languages* (pp. 293–236). Routledge.
- Clemens, L. & Coon J. (2018). Deriving verb initial order in Mayan. *Language*, 94, 237–280.
- Clemens, L.E. & Polinsky, M. (2017). Verb-Initial Word Orders, Primarily in Austronesian and Mayan Languages. In M. Everaert & H. C. Riemsdijk (Eds.), *The Wiley Blackwell Companion to Syntax, Second Edition*.<https://doi.org/10.1002/9781118358733.wbsyncom056>
- Eberhard, D. M., Gary, F. S., & Fennig, C. D. (Eds.). (2022). *Ethnologue: Languages of the World*. (25th ed.). SIL International. <http://www.ethnologue.com>.
- England, N. (1991). Changes in basic word order in Mayan language. *International Journal of American Linguistics*, 57, 446-486.
- Gutiérrez Bravo, R. (2011). External and internal topics in Yucatec Maya. In R. Gutiérrez Bravo, L. Mikkelsen & E. Potsdam (Eds.), *Representing language: Linguistic essays in honor of Judith Aissen* (pp. 105–119). Santa Cruz: Linguistics Research Center, University of California, Santa Cruz.
- Hofling, C. A. & Tesucún, F. F. (2000). *Itzaj Maya Grammar*. University of Utah Press.

An Overview of Number Suppletion in the Na-Déné Family

Anna de la Fuente

Department of Linguistics, McGill University
LING 411: Structure of an Indigenous Language
Professor James A. Crippen

Abstract

Many of the languages in the Na-Déné language family supplete for shape in very similar ways; in Chipewyan, Tlingit, and Navajo, it is consistently verbs of handling that supplete for the shape or state of the object. (Cook 1986:8; Crippen 2011:129; Willie 2000: 40-41). This paper examines eleven languages to establish if suppletion for grammatical number, which is a far more limited phenomenon, also behaves consistently across the Na-Déné family. Then, the author will consider what a cross-linguistic consistency in suppletion for grammatical number means for the history of these languages, suggesting that number suppletion originated in proto-Na-Déné in sg./pl. doubles, and suppletion in triples is a later innovation by the Athabaskan languages.

1 Introduction

Edward Sapir stated that "a peculiarity of many Na-Déné verb stems is that they are limited to a particular class or number of objects" (Sapir, 1915, pp. 534-558). There is a general knowledge among experts in the language family that there are verb stems limited in such a way in many Na-Déné languages, though suppletion for shape has been studied far more extensively than suppletion for number, as it is a wider-ranging phenomenon, with verbs selecting for various qualia such as emptiness or fullness, type of material, or size. It is accepted that the vast majority of Na-Déné languages supplete in verbs of handling for the shape (or some other quality) of the object being handled (Hoijer, 1945a; Krauss, 1968; Axelrod, 2000; Willie, 2000; Poser, 2005) and that this phenomenon is very old and likely traces back to proto-Déné.

Most of the languages in this family supplete for shape in very similar ways; in Chipewyan, Tlingit, and Navajo, it is consistently verbs of handling that supplete for the shape or state of the object. (Cook, 1986; Crippen, 2011; Willie, 2000). Additionally, there are similarities in the shapes or states of objects that tend to be considered: verbs of handling for empty or filled containers, coiled rope, or fabric-like objects show up with regularity across the family.

Such a comparison begs the question if suppletion for grammatical number, a far more limited phenomenon, behaves the same way across the Na-Déné language family. Do verbs supplete for number similarly across the family, suggesting that it originated in Proto-Na-Déné, or are there focus points from which number suppletion spread? An analysis of these questions could deepen our understanding of the way the Na-Déné languages relate to one another across the family, or, even more broadly, offer insight into the way languages do (or do not) change, and why.

For this analysis, I will be examining eleven languages, picked based on geographic region, and my own access to a grammar. I wanted to track this phenomenon across the geographical range of the language family to see if they use number suppletion, and if they do, if it behaves differently based on potential innovation due to isolation, migration, or contact with other languages. Ideally, I would consider every language in the family to make a definitive statement, but due to time and resource constraints, that simply was not possible. Therefore I concede that my work is based on a limited sample of languages, and therefore should not be considered definitive. In addition to this, the data I am using was collected by other researchers, and I am bound in my work to what they have gathered; no fieldwork or elicitation of my own could be done.

I have selected for my consideration the Na-Déné languages Tlingit and Eyak, the Northern Déné languages Dena'ina and Ahtna, the Cordillera Déné languages Witsuwit'en and Tsilhqút'in (also known as Chilcotin), the Eastern Déné languages Dene Sų́liné (also known as Chipewyan) and Slave, the Pacific Coast Déné language Hupa, and finally, the Southern Déné languages Navajo and San Carlos Apache.

For guidance regarding a comparative analysis of several Déné languages, Olga Lovick's 2020 paper *Existential and standard negation in Northern Dene* was consulted. While Lovick examines similarities and differences in existential and standard negation, and I will be examining similarities and differences in number suppletion, I have chosen to follow a similar format to present my data.

2 Number Suppletion

The definition of what suppletion is or isn't is debated, as most things in Linguistics are. It has been argued that perhaps some cases of suppletion should be considered as separate lexical items, as they are only related semantically and not paradigmatically, (Corbett, 2007) or that suppletion only exists when there are clear violations of general inflectional rules. For the purposes of this paper, one should consider number suppletion to be cases which satisfy either of the following criteria laid out by Ljuba N. Veselinov: (1) exceptions to very productive derivational patterns, or (2) exceptions to established agreement patterns (Veselinov, 2013). We shall also establish that there appear to be two types of number suppletion: verb triples of the kind sg./du./pl., and verb pairs of the kind sg./pl., sg.du./pl., or sg./du.pl. When a language suppletes in triples of the kind sg./du./pl., it will also supplete in pairs of the kind sg./pl., sg.du./pl., or sg./du.pl.; languages that have only verb triples do not seem to exist (Veselinov, 2013).

It is also of importance to this analysis that we consider the concept of qualia, that is, certain qualities that a verb restricts for. Roots in the Na-Déné languages are known to restrict for all sorts of qualia such as shape, solidity, or durativity, (Crippen, 2019) but I am looking at verbs that restrict for the qualia of number. I hypothesize that it is consistently a certain kind of verb that tends to supplete for the qualia of number across the Na-Déné languages: verbs of motion, such as 'walk', sit or 'go', or verbs of action, such as 'cry,' or 'laugh.'

1.1 Tlingit

We will first consider Tlingit, one of the more conservative of the Na-Déné languages. In Tlingit, it is primarily verbs of movement and handling that show suppletion of the root depending on number. This is a purely lexical phenomenon: it does not show up in every verb of movement in Tlingit (Crippen, 2011).

An example is the existence of two roots for the verb 'to go by foot' (Crippen, 2011):

(1) Go

- (a) √gut 'sg. go by foot'
- (b) √at 'pl. go by foot'

One should also consider the verb roots for 'to sit' (Edwards 2009: 458):

(2) Sit

- (a) √áa 'sg. sit'
- (b) √kee 'pl. sit'

When a verb suppletes for number, each root will demand singular and plural pronominals respectively; it is ungrammatical to use a plural root like √at with a singular pronominal, or a singular root like √gut with a plural pronominal. See the below ungrammatical examples from James Crippen's 2011 paper *Basics of Tlingit Verbal Structure - the Tlingit Language*:

(3) Go

- (a) *shgóont xwaa.át
shgóon-t yü-xa-ŷa-.at-ŷ
school-PNCT PFV-1SG.S-CL [-D, 0, +1]-go.PL-VAR
- (b) *shgóont wutuwagoot
shgóon-t yü-tu-ŷa-gut-ŷ
school-PNCT PFV-1PL.S-CL [-D, 0, +1]-go.SG-VAR

Thus it can be stated that Tlingit suppletes for numbers via sg.pl verb pairs, and in certain verbs of motion.

1.2 Eyak

Much like Tlingit, sg.pl number suppletion exists in verbs of motion in Eyak. We will consider what Krauss called “postural verbs”; these are the smallest and least distinct subclass of motion verbs. Showing the contrast, we have the following postural verb roots:

(3) Sit

(a) $\sqrt{\text{da}}$ ‘sg. sit, stay’

(b) $\sqrt{\text{qu}}$ ‘pl. sit, stay’

(4) Lie prone

(a) $\sqrt{\text{te}}$ ‘sg. lie prone’

(b) $\sqrt{\text{tu'ch}}$ ‘pl. lie prone.’

Note that these verbs are semantically very similar to the verbs that use number suppletion in Tlingit: they are verbs of motion or action.

1.3 Northern Déné

We will move on from the Tlingit and Eyak to now consider the Athabaskan languages, starting with the Northern Déné languages Dena'ina and Ahtna. These two languages are very geographically close to Tlingit and Eyak, and are historically considered more conservative in their grammar and lexicon than the other Déné languages.

In her 1978 paper *Morphology and Semantics of the Tanaina Verb*, Joan Tenenbaum discusses a large class of motion and action verbs in Dena'ina that supplete in a very similar way to Tlingit and Eyak; the verbs that tend to supplete for number are intransitive verbs such as 'cry,' 'talk,' 'laugh,' 'run,' 'handle,' and 'walk,' which have one stem for singular-dual subjects, and one stem for plural subjects. (Tenenbaum, 1978). Tenenbaum does not, however, offer any form of translation for the verbs she claims follow this pattern.

In Ahtna, James Kari provides a very abridged discussion of the thematic categories of verbs, stating that in addition to verb theme categories, there are several additional semantic links between sets of verb themes, including a singular and dual/plural contrast. A few examples are provided:

(5) Go

(a) $\sqrt{\text{(y)aa}}$ ‘sg./du. go’

(b) $\sqrt{\text{daetl'}}$ ‘pl. go’

(6) Sit

(a) $\sqrt{\text{daa}}$ ‘sg. Sit’

(b) $\sqrt{\text{ts'ii}}$ ‘pl.sit’

(7) Talk/speak

(a) $\sqrt{\text{(y)aa}}$ ‘sg./du. talk/speak’

(b) $\sqrt{\text{ghaas}}$ ‘pl. talk/speak’

It appears, then, that these two Northern Déné languages both supplete for number in the expected manner, via verbs of motion or action. They also share a new feature: one stem for singular/dual subjects, and one stem for plural subjects, while Eyak and Tlingit do not consider dual forms.

1.4 Cordillera

The two languages we will be examining from the Cordillera region of the Athabaskan range are Witsuwit'en and Tsilhqút'in, also known as Chilcotin (for the purposes of this paper, I will call it Tsilhqút'in).

The discussion of number suppletion in verb roots in Witsuwit'en is quite limited, but Sharon Hargus provides examples in her paper *Witsuwit'en Grammar: Phonetics, Phonology, Morphology*, including the two following cases:

(8) Go

(a) $\sqrt{\text{ye}}$ ‘sg. go’

(b) $\sqrt{\text{?as}}$ ‘du. go

(c) $\sqrt{\text{dil}}$ ‘pl. go’

(9) Sit

- (a) √de ‘sg. sit’
- (b) √qe ‘du sit’
- (c) √d-l-ts’i ‘pl. sit’

Instead of using one root for both the singular and dual form, and another for plural like the Northern Déné languages, or one form for singular and another for plural like Tlingit and Eyak, Witsuwit’en suppletes in verb triples (Hargus, 2007). No language that we know of has only triples (Veselinova, 2013), so it is extremely likely that there exist some verb pairs that supplete only for a singular-plural contrast, or perhaps for a singular/dual-plural contrast. Note that again, we see the verb for ‘to go’ and the verb for ‘to sit.’ These particular verbs seem to be appearing quite often in our discussion, further supporting my hypothesis that it is, in fact, a specific class of Na-Déné verb that suppletes for number

Cook presents little data for Tsilhqút’in suppletion in his work *A Tsilhqút’in Grammar*. Unlike the languages we have examined so far, it appears that Tsilhqút’in does not supplete for number, even in regards to the verbs where suppletion is expected to appear; verbs of motion and action like ‘go,’ ‘sit,’ ‘walk,’ and ‘swim’ have only one root, and number suppletion is not mentioned throughout the entire grammar. Tsilhqút’in does, however, supplete for shape in regards to verbs of handling, which is a far more common and broad form of suppletion in the Na-Déné languages.

Further digging into Cook’s other work was not fruitful – I was not able to come up with any suppletive stems for number, which is perplexing. I speculate that one of two things are at play here: either Tsilhqút’in did supplete for number at one point, but lost the contrast over time (this would be strange – it is not often that a language loses an entire paradigm without a trace) or Cook failed to mention this paradigm in his work.

1.5 Eastern Déné

The two Eastern Déné languages that we will analyze are Dene Sųlíné– also known as Chipewyan– and Slave; we will consider the Bear Lake, Hare, and Slavey dialects.

Dene Sųlíné suppletes with verbs of motion via verb triples (Cook, 1986):

(10) Sit

- (a) √da ‘sg. sit’
- (b) √ke ‘du. sit’
- (c) √tθ’i ‘pl. sit’

Slave, like Dene Sųlíné suppletes both in pairs and in triples with the expected verbs: verbs of motion and handling. Below we see separate verb themes for singular, dual, and plural (Rice, 1989):

(11) Sit

- (a) Whida ‘sg. S/he is seated’ (Bear Lake)
- (b) Whíkee ‘we (du.) are seated’ (Bear Lake)
- (c) Ts’edéhk’w’i ‘we (pl.) are seated’ (Bear Lake)

(12) Go (controlled)

- (a) Déya ‘sg. s/he set out’
- (b) Kedé?a ‘we (du.) set out’ (Hare, Bear Lake)
- (c) Kedédee ‘we (pl.) set out’ (Hare, Bear Lake)

(13) Go (noncontrolled)

- (a) Déhtlah ‘sg. I set out’ (Slavey)
- (b) Legedéhtthe ‘we (du.) set out’ (Slavey)
- (c) Gogedéhtthe ‘we (pl.) set out’ (Slavey)

Next we see two examples of one verb theme for singular/dual, and one for plural theme (Rice, 1989):

(14) Eat

- (a) Shétį ‘sg. s/he eats’
- (b) Shégetį ‘they (du.) eat’ (Bear Lake, Slavey)
- (c) Shégeyeh ‘they (pl.) eat’ (Slavey)

(15) Swim

- (a) K’inabee ‘sg. s/he swims’ (Hare, Bear Lake)

(b) K'inakebee 'they (du.) swim' (Hare, Bear Lake)

(c) k'inakeʔóh 'they (pl.) swim' (Bear Lake)

Finally, the opposite: one verb theme for plural, and one for singular/dual (Rice, 1989):

(16) Sleep

(a) Shoti 'sg. s/he sleeps' (Hare)

(b) Shukiya 'they (du./pl.) sleep' (Hare)

(17) Die

(a) Laníwe 'sg. s/he died' (Bear Lake)

(b) Lakenidé 'they (du./pl.) died' (Bear Lake)

Slave and Dene Słiné both supplete in the predicted verb forms ('sit' and 'go' are quite common examples of verbs of motion). Rice is particularly thorough with her examples, providing verbs that express a change of state such as 'die' and 'sleep.' Both supplete in triples, but Slave provides an excellent example of a language suppling both in triples, and in pairs; as Veselinov claims, any language that suppletes in triples will also supplete in pairs (Veselinov, 2013).

1.6 Pacific Coast Déné

Due to my limited access to grammars, I will only be looking at one Pacific Coast language: Hupa, spoken on the lower Trinity River in Northwestern California. In his *Hupa Grammar*, Victor Golla offers examples of verbs in Hupa that supplete for singular and plural. He goes on to elaborate that it is usually intransitive verbs of motion that do this, such as the verb for 'to move somewhere' (Golla, 1978).

(18) Move somewhere

(a) √yaW/ya 'sg. moves somewhere'

(b) √dił/deł 'pl. moves somewhere'

Also provided as an example is the verb 'to lay:'

(19) Lay

(a) √ten 'sg. lays'

(b) √teč 'pl. lays'

Golla states that other "typical" examples of verbs that supplete for number in Hupa include the verbs 'to stampede,' 'to talk,' and 'to get up' (Golla, 1978). Thus, Hupa follows the expected pattern and suppletes for singular and plural verbs of motion and action.

1.7 Southern Déné

The Navajo language suppletes with verb pairs in singular and plural, and also with verb triples in singular, plural, and dual. See the examples below:

(20) Go

(a) √yá 'sg. go'

(b) √áázh 'du. go'

(c) √kai 'pl. go'

(21) Lay down

(a) √tí 'sg. lay down'

(b) √téézh 'du. lay down'

(c) √jéé 'pl. lay down'

Other verbs supplete simply for singular and plural.

(22) Die

(a) √tsá 'sg. die'

(b) √ná 'pl. die'

Other verbs that supplete for number include the verbs for 'to come out [of a place]', 'to sit' and 'to run for shelter.' Hence the verbs that supplete in Navajo are verbs to do with handling and motion, which means that Navajo fits into the expected pattern of Athabaskan verbs.

San Carlos Apache exhibits the same pattern observed in Navajo and suppletes in singular, dual, and plural. According to de Reuse, many motion verbs, which he describes as verbs that express going, coming and

other movement from one place to another by human beings, have separate singular, dual, and plural stems. He provides the following example (De Reuse, 2006):

(23) Go

- (a) √yāā ‘sg. go’
- (b) √‘āāzh ‘du. go’
- (c) √kai ‘pl. go’

Since it is known that Apachean languages form a continuum, I think it would be reasonable to hypothesize that the other Apachean languages also supplete with triples in verbs of motion.

1.8 A Note On Haida

Sapir claimed that Haida, a language previously and erroneously thought to be Na-Déné, suppletes for number, and cited the following form as evidence.

(24) Go

- (a) √qa ‘sg. go, move’
- (b) √dal ‘pl. go, move.’

While I concede that it is very interesting that Haida suppletes for number via a verb of motion, Sapir failed to mention that only four verbs in Haida supplete for number. Suppletion for number appears to be an areal feature of many of the Northwestern American languages (Tsimshian, spoken in British Columbia and Alaska, also suppletes for number in pairs).

However, suppletion for shape never appears in Haida. This form of suppletion is far more common and attested in the Na-Déné languages, and is arguably one of the hallmarks of the family. Thus, I believe that Haida’s suppletion for number in a verb of movement is, in fact, a borrowing at best, or more likely, a simple case of coincidence.

2 Conclusion

In summary, Tlingit, Eyak, and Hupa supplete for number with singular-plural pairs. Ahtna and Dena’ina supplete for number with singular/dual-plural pairs. Witsuwit’en, Dene Sųliné, Slave, Navajo, and San Carlos Apache all supplete for number with singular-dual-plural triples, and also with pairs. Tsilhqút’in does not appear to supplete for number at all.



Figure 1. A map of the Na-Déné languages marked for their manner of number suppletion. By Noahedits - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=85621220>.

With this data as evidence, I would argue that this data indicates that number suppletion originated in proto-Na-Déné with verbs of motion; since it is both consistent and evident in both Tlingit and Eyak, as well as in a good portion of the Athabaskan languages, it seems to be old. It is extremely unlikely that this paradigm developed in Proto-Athabaskan, and then was borrowed by Tlingit and Eyak, or even that it developed in

Proto-Eyak-Athabaskan and was borrowed by Tlingit. Verbs of motion like “to go” or “to sit” are basic vocabulary, and thereby tend to resist borrowing. Additionally, it is extremely rare to borrow an entire paradigm.

If it did indeed originate in Proto-Na-Déné, my question would then be why Tsilhqút'in does not appear to supplete for number. Frankly, I am not sure if I believe that it doesn't; perhaps the phenomenon was simply overlooked. My skepticism could be quelled with some simple elicitation fieldwork. In the case that it does not in fact supplete for number, I would be curious to see if I could determine why and when the phenomenon was lost.

Additionally, I believe that suppletion for number in sg./pl. doubles existed first, and suppletion in triples is an innovation. Since all languages which supplete in triples also supplete in pairs, and the more conservative languages (Tlingit, Eyak, Ahtna, and Dena'ina) only supplete in pairs, I think it is reasonable to say that suppletion for number in triples came about as a later innovation. Ahtna and Dena'ina seem to be the bridge between Tlingit and Eyak's sg./pl pairs and languages with sg./du./pl. triples. They take dual person into account but combine it with the sg. root. I think this may be a “transition” stage of sorts, and given enough time, the sg./du. contrast would become distinct, perhaps with the innovation of a new root for dual person, or a new root for singular person.

Once again, I must concede that my work is based on a limited number of Na-Déné languages, and a limited amount of data, but I hope that my insight into number suppletion sheds some light on the ways that the Na-Déné languages relate to each other, and perhaps opens doors for future research.

References

- Axelrod, M. (2000). The semantics of classification in Koyukon Athabaskan. *The Athabaskan Languages: Perspectives on a Native American Language Family*, 9–27. <https://www.uaf.edu/anla/record.php?identifier=KO983A2000>
- Cook, E.-D. (1986). *Athapaskan Classificatory Verbs*. University of Calgary.
- Cook, E.-D. (2013). *A Tsilhqút'in grammar*. UBC Press.
- Cook, E.-D. (1996). Third-Person Plural Subject Prefix in Northern Athapaskan. *International Journal of American Linguistics*, 62(1), 86–110. <http://www.jstor.org/stable/1265949>
- Corbett, G. (2007). Canonical Typology, Suppletion, and Possible Words. *SMG published journal articles and book chapters*. 83. 10.1353/lan.2007.0006.
- Crippen, J. (2011, September 30). *Basics of Tlingit verbal structure - the Tlingit language*. Retrieved February 14, 2022, from <https://tlingitlanguage.com/wp-content/uploads/2015/01/Basics-of-Tlingit-Verbal-Structure.pdf>
- Crippen, J. (2019). *The Syntax of Tlingit Verbs*. The University of British Columbia.
- de Reuse, W. J., & Goode, P. (2006). *A Practical Grammar of the San Carlos Apache Language*. LINCOM Europa.
- Edwards, K. (2009). *Dictionary of Tlingit*. Sealaska Heritage Institute.
- Golla, V. K. (1971). *Hupa Grammar*. University of California.
- Hamill, J.F. (1981). Linguistics: The Navajo Language: A Grammar and Colloquial Dictionary. *Robert W. Young and William Morgan*. *American Anthropologist*, 83: 440-441. <https://doi.org/10.1525/aa.1981.83.2.02a00470>
- Hargus, S. (2007). *Witsuwit'en Grammar: Phonetics, Phonology, Morphology*. UBC Press.
- Hojer, H. (1945). Classificatory Verb Stems in the Apachean Languages. *International Journal of American Linguistics*, 11, 13 - 23.
- Kari, J. M. (1990). *Ahtna Athabaskan Dictionary*. Retrieved February 14, 2022, from <https://mycourses2.mcgill.ca/content/enforced/561090-XLS6N202201/Grammars/Kari%201990%20Ahtna.pdf>
- Krauss, M. E. (2015, July 31). *Eyak Grammar*. Retrieved February 11, 2022.
- Leer, J. (1991, December). *The Schetic Categories of the Tlingit Verb*. Retrieved February 11, 2022, from <https://uafanlc.alaska.edu/Offline/TlingitLANG.pdf>
- Leer, J. (1969). Noun-classification systems in Athapaskan, Eyak, Tlingit, and Haida verbs. *International Journal of American Linguistics* 34(3), 194-203.
- Lovick, O. (2020). Existential and standard negation in Northern Dene. *International Journal of American Linguistics*, 86(4), 485–525.
- Poser, W. J. (2005). Noun Classification in Carrier. *Anthropological Linguistics*, 47(2), 143–168. <http://www.jstor.org/stable/25132325>
- Rice K. (1989). *A grammar of slave*. Mouton de Gruyter.
- Richardson, M. (1968). *Chipewyan Grammar*. Retrieved February 14, 2022, from <https://mycourses2.mcgill.ca/content/enforced/561090-XLS6N202201/Grammars/Richardson%201968%20Den%20Suline.pdf>

Sapir, E. (1915), *The Na-Dene Languages, A Preliminary Report*. American Anthropologist, 17: 534-558. <https://doi.org/10.1525/aa.1915.17.3.02a00080>

Tenenbaum, J. M. (1978). *Morphology and Semantics of the Tanaina Verb*. Retrieved February 14, 2022, from <https://mycourses2.mcgill.ca/content/enforced/561090-XLS6N202201/Grammars/Tenenbaum%201978%20Dena%20ca%20bcina.pdf>

Veselinova, L. N. (2013). *Verbal Number and Suppletion*. The World Atlas of Language Structures Online. Retrieved February 24, 2022, from <http://wals.info/chapter/80>

Willie, M. A. (2000). Individual and Stage Level Predication and the Navajo Classificatory Verbs. In *Papers in Honor of Ken Hale* (pp. 39–51). essay, MIT Press.

Transitivity-aspect interactions in Igbo: a view from event delimitation

Zahur Ashrafuzzaman

Department of Linguistics, McGill University

LING 415: Field Methods

Professor Martina Martinović

Abstract

Certain Igbo verbs which are obligatorily transitive in non-perfective constructions may appear without an overt complement only in perfectives. Building on a limited previous literature on event delimitation in Igbo, an initial syntactic framework is given first for Igbo cognate objects and next for the perfective/non-perfective alternation. A unified new approach based on event features (as used in Crippen 2019) is sketched out for future research.

1 Introduction

Certain Igbo verbs are obligatorily transitive and invariably take an object across non-perfective constructions, including factative (-rV) and imperfective (na-) constructions. In some cases, this will be a cognate object without a real-world extension or apparent semantic contribution, and thus appears to be syntactically rather than semantically required. However, with the addition of the verbal suffix -la which has been analyzed as a perfective aspect marker (Emenanjo 2015: 455, Nweya 2018: 128), these objects can become optional in a certain class of verbs. This paradigm is illustrated in (1) and (2).

- (1) a. *⁵ zà -rà
3SG swell -rV NMLZ-swell
(Intended: It swelled.⁵⁶)
- b. ⁵ zà -rà á- zà
3SG swell -rV NMLZ- swell
It swelled.
- c. ⁵ zà -à -là (á- zà)
3SG swell -VS -PFV NMLZ- swell
It has swelled.
- (2) a. ñì rì -rì
1SG eat -rV food
I ate.
- b. ñì rì -rì ñrí
1SG eat -rV food
I ate⁷.
- c. e- rì -e -la -m (ñrí)
FIN- eat -VS -PFV -1SG
I have eaten⁸.

A similar pattern can be observed in negative perfective constructions, which use the suffixes *-be-ghi* in conjunction (Enweonye & Egwuekwe 2015: 199, Ezenwafor 2019: 34). Examples are given in (3).

- (3) a. *e- rì -ghi -m
FIN- eat -NEG -1SG

⁵ 1 = first person, 3 = third person, APPL = applicative, DEF = definite, DEL = event delimitator, DET = determiner, FIN = finite, IMP = imperative, NEG = negative, NMLZ = nominalizer, OBJ = object, PFV = perfective, PROG = progressive, PROX = proximal, SBJ = subject, SG = singular, VS = (open) vowel suffix.

⁶ Orthographic note: ⟨ r ⟩ is used for /ɹ/ by convention.

⁷ Note that ñrí here is not strictly the cognate object, which is érí. However, ñrí is not necessarily referential and is also formed from the verb and a nominalizer.

⁸ Tone data is presented when known, but is missing for some examples.

- I did not eat.
- b. e- ri -ghi -m ńrĩ
FIN- eat -NEG -1SG
- I did not eat.
- c. e- ri be- -ghi -m (ńrĩ)
FIN- eat -PFV -NEG -1SG
- I have not eaten.

In (1), for example, *aza* is the cognate object of the verb *za* “to swell.” It does not pick out any actual referent in the world, but is necessitated by the verb in absence of a referential complement due to some structural requirement. Evidently, this requirement is either fulfilled or lax by the presence of the *-la* or *-be* suffix. What is the nature of this requirement, and why should it be impacted by *-la* or *-be*? This constitutes the core of the problem with which this work is concerned.

To date, the only discussion of this issue I am aware of is by Manfredi (1993). Manfredi uses the notion of an event “delimiter” which may be a referential object, cognate object, or the perfective marker, to derive the structural discrepancies at play here. While I will not engage with every aspect of Manfredi’s argumentation, the limited nature of previous literature on this topic means that this paper will in effect be a dialogue with Manfredi contextualized by more recent developments in linguistics overall (particularly Minimalism) and in Igbo linguistics, particularly the syntactic treatments in Nweya (2018), Nweya (2021), and Amaechi (2020).

I will first engage in a brief informal description of the semantic properties usually discussed with relation to cognate objects in Igbo in Section 2. I will then attempt to clarify to some extent the phenomenon of event delimitation in Section 3. In Section 4, I will paint in broad strokes the relevant facts of Igbo syntax as held by the recent frameworks mentioned above, and will go on to describe a first pass at accounting for event delimitation using Minimalist syntax in Section 5. Having done this, we can step back and look at another way to formalize event delimitation using event features from Crippen (2019), which will allow us to keep the relevant phenomena connected but allow for individual syntactic and semantic investigation. This constitutes Section 6, which concludes this paper.

2 A first look at cognate object semantics

Further complicating the paradigm presented in Section 1 is the fact that Igbo also features naturally intransitive verbs that can appear with or without a cognate object, a perfective marker, or both. These possibilities are shown in (4).

- (4) a. ńmírĩ zò -rò
rain fall.V -rV
It rained.
- b. ńmírĩ à zò -r-o ézò
rain DEF.PROX fall.V -rV fall.N
It really rained.
- c. ńmírĩ e- zo -la
rain FIN fall.V -PFV
It has rained (but it is no longer raining).
- d. ńmírĩ à e- zo -la ezo
rain FIN fall.V -PFV
It has really rained (and it could still be raining).

These data indicate the use of the cognate object for “emphasis.” This description is one that has been uniformly applied to all cognate objects in Igbo by Nwachukwu, who does also recognize the differing structural requirements governing their presence in transitive and intransitive constructions (Nwachukwu 1987:19-21). Beyond the need for a formal account for this, what remains unaddressed is that cognate objects’ differ also in their semantic contribution when used in transitive and intransitive; in the former case their appearance is marked, but in the latter unmarked, which is incompatible with any contribution of emphasis.

3 Event delimitation

Manfredi calls delimitedness a signifier of the “total affectedness” of the object (Manfredi 1993:14). However, this reading doesn’t seem to track for a sentence like *ó biara abia* “3SG actually came” unless we either stipulate that the subject here (3SG) is really an internal object or that there is an implicit argument, such as “here.” I suggest that it really is event semantics rather than object semantics at play here. As the emphatic quality of the cognate object seems informally comparable to the emphasis present in certain forms of copied verb reduplication in English (“but do you *like-like* him?”; see Kimper 2008), it seems appropriate to draw the analogy that English verb focus reduplication also semantically affects events themselves more so than objects involved in the events. Manfredi has later expressed that the CO in cases where it is emphatic “triggers a polarity focus (‘emphasis’) reading similar to English affirmative *do*-support, giving the lexical predicate a topical or presupposed status” (Manfredi 2012:3), and this to me seems more tenable than Manfredi’s earlier claim.

3.0.1 Delimited and non-limited (intransitive) events

Not all events must be delimited in Igbo. Some verbs such as *zo* may appear without any complement, or with a cognate object or a modifier; similarly, *bia* ‘come’ may occur without any complement, with a referential object, with a cognate object, or both. Importantly, this means that a delimitation requirement must be lexically specified, i.e. a feature of V.

3.0.2 Type of delimiters

Referential nouns are perhaps the most transparent sort of delimiter. In (5), the event being referred to was completed once the yam was eaten.

- (5) *m̩* *rì* *-rì* *d̩zĩ*
 1SG eat -rV yam
 I ate yam.

d̩zĩ in (5) is thus a telic delimiter, but delimiters are not limited to constraining telicity of an object. (6c) shows an example where a sentence is ungrammatical without an object or modifier (same as (6b), repeated from (1) above) but where adding an adverbial modifier makes the utterance grammatical without the need for a cognate object. And as we have seen, (6d) shows that the perfective marker is also a sufficient delimiter.

- (6) a. **ó* *zà* *-rà*
 3SG swell -rV
 (Intended: It swelled.)
 b. *ó* *zà* *-rà* *á-* *zà*
 3SG swell -rV NMLZ- swell
 It swelled.
 c. *ó* *zà* *-ra* *óbéré óbéré*
 3SG swell -rV (small small)
 It swelled gradually/slowly/a little bit.
 d. *ó* *zà* *-à* *-là* (*á-* *zà*)
 3SG swell -VS -PFV NMLZ- swell
 It has swelled.

Event delimitation thus is a broad label encompassing several sorts of semantic effects on an event expressed by a verb. For now, I will proceed to sketching out the syntax involving cognate objects, first in broad terms and then as relates to event delimitation. Later in Section 6, however, I will point towards a possible way to formalize the phenomenon of event delimitation in a way that preserves the unison of these phenomena but still allows for the distinct event-related semantic phenomena at play to be studied individually without being homogenized.

4 Cognate objects in Igbo syntax

4.1 An initial syntactic framework

For the most part, I will take as a starting point the cartographic structure posited by Nweya (2018), Nweya (2021) pointing out significant deviations. However, see also Amaechi (2020) for another different but detailed analysis of Igbo clause structure. One caveat to the present discussion is that I do not enter very heavily into discussions of Case, partially as it is disputed in Igbo (cf. Amaechi 2020, Georgi & Amaechi 2022) and partially to simplify the discussion. Finally, my trees use Bare Phrase Structure and omit empty functional layers that are not relevant to a given example.

- (7) a. m̩ rì -rì d̩zĩ
 1SG eat -rV yam
 I ate yam.
- b. m̩ rì -rì d̩zĩ è- rì
 1SG eat -rV yam NMLZ eat
 I actually ate yam.

A basic transitive sentence in the declarative (“factive” or affirmative, see Amaechi (2020)) is given in (7a) (repeated from (5) and illustrated in Figure 1.

4.2 Base-merge hypothesis

(7b) shows a sentence where a cognate object (CO) is present in addition to a referential object to provide emphasis. This and the following subsection will represent different possible ways to represent the inclusion of COs in the structure. Note that this section primarily deals with structure and not meaning. The semantic contribution of cognate objects are addressed to some extent in section 3.

Perhaps the simplest way of representing how the CO originates in the structure is to say that it is as being base-merged fully formed as its own nominal element (either directly from the lexicon or from a prior or parallel word-formation operation). This is what is implied by the diagram in Manfredi (1993:14), though his actual analysis differs as we shall see in Section 4.4. Manfredi depicts the CO adjoining directly to V to form a complex head. A structure for (7b) under this approach is shown in Figure 2.

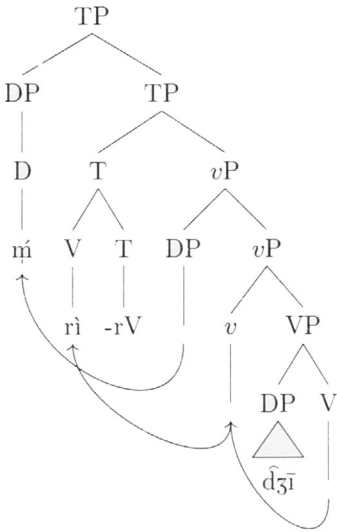


Figure 1: Tree for (5)

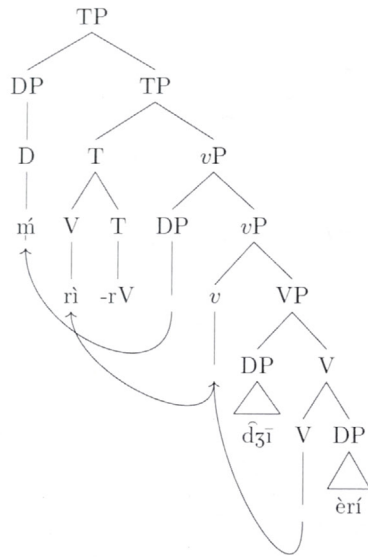


Figure 2: Tree for (7b)

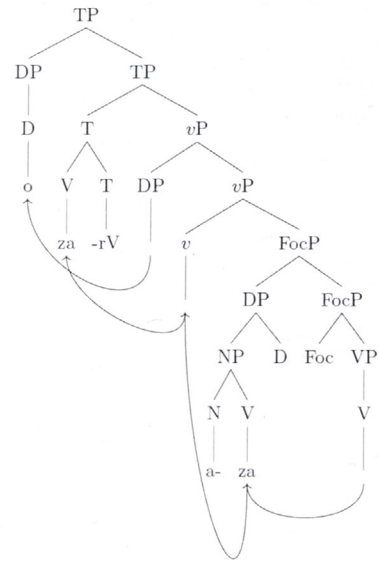


Figure 3: Tree for (1)

4.3 Verb-copying hypothesis

Nweya, however, analyzes cognate objects as arising from verb-copying (Nweya 2018:198-201). Under a view that the CO constitutes verb focus (consistent with Manfredi (1993) among others), the verb actually moves to a functional head Foc on its way to *v*. Here it is nominalized with a nominalizing prefix and a copy of the verb root proceeds further up the verbal spine. We will start with a simpler example with only a cognate object and no referential object to illustrate this. Figure 3 illustrates the sentence given in (1).

There are some potential issues to be clarified regarding this structure. This analysis assumes a Copy Theory of Movement where only the topmost element in a chain of (identical) elements is pronounced (Nunes 2001). In this view, the lower *za* might remain pronounced because its merging with *a-* has rendered it distinct from the higher copy. One question that arises is whether we might expect the entire *aza* complex to raise under V-to-*v* movement, which doesn't seem to be the case under this analysis. If this is indeed an issue, there are a few possible analyses of why raising does not occur. One possibility is that the nominalizer *a-* is held in place by some feature on D. Another is that VP's merging with (covert) *v* triggers Spell-out sending *aza* to PF, but because *v* has some uninterpretable feature and needs to be valued by V (or because T needs to be valued and attach its *-rV*, and so V needs to move to the phase edge to remain accessible), the system resorts to something like Raising-before-Transfer (Skinner 2009). Being an expensive operation, this only preserves the minimal item with a matching feature.

4.3.1 Evidence from applicatives

Manfredi (1993) gives an example where a cognate object in an applicative construction (which also uses a suffix of the shape *-rV* on the verb) surfaces with the applicative suffix on the CO as well. This is shown in (8). If this is a widespread pattern, this would provide further support for a view where the CO is derived rather than base-merged (though Manfredi has a somewhat different view as will be seen in Section 4.4). The generation of the CO for (8) under this view is shown in Figure 4.

- (8) Ézè buuru m ibu ébúru.
 Eze bu -rV -ru m ibu e- bu -ru.
 Eze carry -rV -APPL 1SG load NMLZ carry -APPL
 Eze really carried a load for me.

Note that the structure in Figure 4 does not derive the correct linear order for (8). For this, we may need *m* and *ibu* to move up, e.g. to check Case. To ensure that *eburu* isn't a constituent that moves further up, this should be possible either by stipulating that this Case-related movement occurs before or concurrent to the movement deriving *eburu* or by saying that the CO is somehow “weak” with respect to certain nominal features and thus cannot be assigned case (contra. Manfredi 1993, Amaechi 2020). Another issue is the landing sites of these nominals if they were to move up. One possible solution is to simply create shells of vP or FocP, though this does not seem to be a particularly well-constrained operation. Another is to posit higher projections. Nweya argues for both low and high projections for both FocP and ApplP for independent reasons (Nweya 2018:120, 201). These could be potential landing sites, but as both high projections are above TP, this would force us to also stipulate subject movement higher into the C domain, e.g. into TopP. Amaechi, however, argues against the view that subjects in Igbo naturally move into a topic position above TP (Amaechi 2020:147-150).

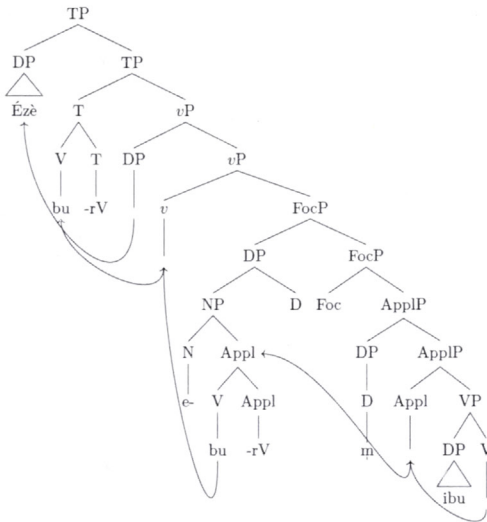


Figure 4: Tree for (8)

It is also not clear whether the applicative suffix surfacing on the CO is a common feature across dialects; I have not found any other data corroborating Manfredi’s claim. See (9) for some sentences from Oha (2008) which do not appear to show the suffix on the cognate object.

- (9)
- a.

o

kwu

-u

-ru

m

o-

kwu

3SG

talk

-rV

-APPL

1SG

NMLZ-

talk

They (3SG) spoke for (on behalf of) me.
- b.

o

du

-u

-ru

m

ya

odu

3SG.SBJ

advise

-rV

-APPL

1SG

3SG.OBJ

advice

They_i (3SG) advised them_j (3SG) for me.
- c.

kwe

-e

-re

m

ukwe

ṅke

ṁ

sing

-rV/IMP?

-APPL

1SG

song

DET

1SG

Sing my own song for me⁹.

4.3.2 Evidence from argument-reversal verbs

Igbo has a number of verbs that have received some attention for the ability of their subject and object to switch surface position without any morphological indication (Georgi & Amaechi 2022; Uchekukwu & Egenti 2015). Two of these are demonstrated in (10) and (11).

- (10)
- a.

Úchè

nà-

á-

kwà

okwàrà

⁹ Gloss of ṅke as DET follows Obiamalu (2022).

- Uche PROG- FIN cough cough
lit. Uche is coughing a cough.
Uche is coughing.
- (11) b. okwàrà nà- á- kwà Úchè
 cough PROG- FIN- cough Uche
 lit. A cough is coughing Uche
 Uche has a cough. (Uchechukwu & Egenti 2015)
- a. Ûju nà- è- ghe ugherē
 Uju PROG- FIN- yawn yawn
 Uju is yawning.
- b. ugherē nà- è- ghe Uju
 yawn PROG- FIN- yawn Uju
 Uju is yawning. (Iloene 2013)
- (12) a. Òkéke zè -rè úzere
 Okeke sneeze -rV sneeze
 Okeke sneezed. (Aboh & Onuorah 2020)
- b. uzerè zè -rè ṛmadu
 sneeze sneeze -rV person
 Somebody sneezed. (Chinweude 2022)

Some verbs of a semantically similar class seem to have developed a canonical order and no longer vary. One is shown in (13).

- (10) ágórō nà- á- gó éwú à
 hunger PROG- FIN- hunger goat DEF.PROX
 This goat is hungry.

The verbs presented here are only a subclass of Igbo's argument-reversal verbs (or those verbs adjacent to that class), but are included here because their cognate objects all contain an -rV suffix unlike most other cognate objects. This does not appear to have garnered much attention in the literature. While there is no synchronic evidence of a verbal applicative in these structures, it seems possible that a semantically meaningful verbal -rV suffix became fossilized in certain cognate objects resulting from copying a suffixed verb. It seems unlikely that this was simply the factative -rV, as we don't tend to see this suffix on other cognate objects. This hypothesis will need verification and comparison with other potential explanations surrounding the presence of -rV, but if validated could serve to support a verb-copying explanation of cognate objects.

4.4 Lexical insertion at PF spellout

Manfredi's opinion on the CO is that it is neither base-generated as a nominal nor formed by merge-based verb copying, but that it is "generated productively at PF spellout in absolute-final position, as a sentential affix" (Manfredi 2012:3; see also Manfredi 1993:10). This should theoretically be able to account for any fossilized -rV suffixes on the cognate object as discussed in the previous two sections, but of course introduces its own stipulations. I do not have much to say on this here as it does not at a glance appear to have much compatibility with the Minimalist framework adopted here. Manfredi also specifically distances his framework from the Vocabulary Insertion possible with Distributed Morphology (Manfredi 2012:4).

Overall, it is simplest for the moment to assume that cognate objects are base-merged. Further study may be required to conclude one way or the other.

5 Capturing delimitation alternations syntactically

Manfredi posited that a referential object, cognate object or perfective marker may be the "delimiter" for an event (Manfredi 1993:14). Recall that not all verbs require a delimiter, and so the necessity for a delimiter

must be lexically specified. Under Minimalism, we can represent this relationship as an uninterpretable feature $[u\text{del}]$ on certain V, which must be matched with a $[\text{DEL}]$ feature via Agree on an object or perfective marker lest the derivation crash. This Agree relationship is illustrated in Figure 5 for the sentence (1b). After valuation, the verb moves cyclically up to v and then T while the subject moves into the specifier of T, deriving the surface linear order for the sentence. .

For an objectless verb in the perfective, the $[\text{DEL}]$ feature is on *-la* in Asp instead. Not being able to find a matching feature in the c-command domain, *za* is only able to get valued once it moves up to T and then launches another probe. This is illustrated in Figure 6.

Note that this structure makes certain predictions about which elements will undergo Agree with the verb first when there are multiple elements carrying a $[\text{DEL}]$ feature. Assuming the accuracy of Manfredi's proposal that the cognate object is generated under a complex V node, this predicts that cognate objects Figure 5: Tree for (1b) before and after verb and subject movement will always be valued before referential objects or the perfective marker. Figure 7 and Figure 8 illustrate this for (1c) (with a CO) and (7b) respectively.

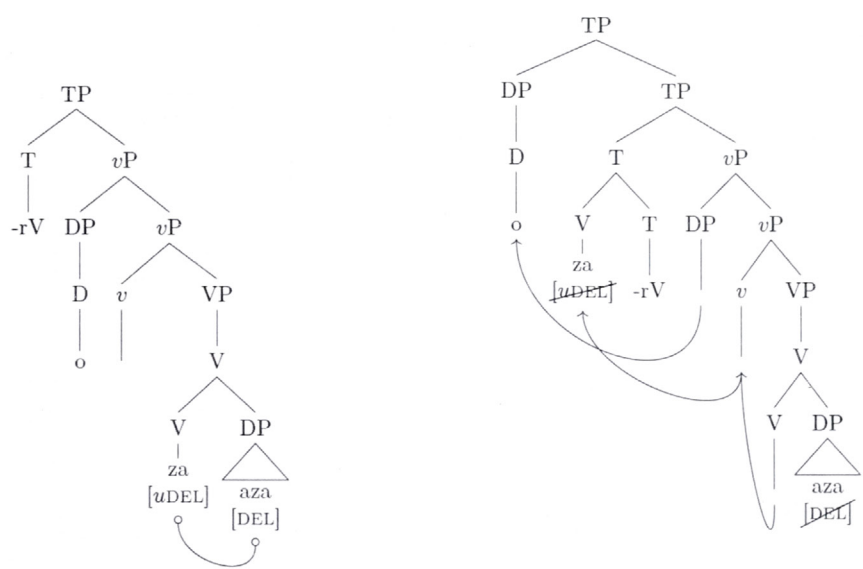


Figure 5: Tree for (1b) before and after verb and subject movement

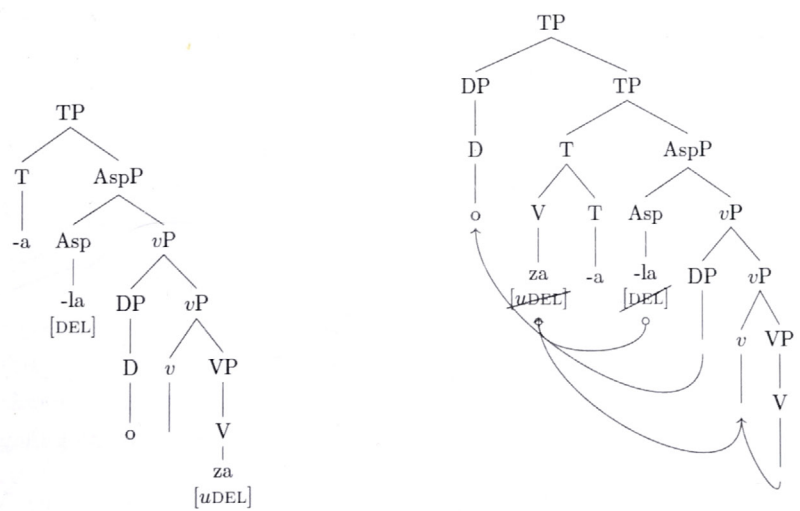


Figure 6: Tree for (1c) without cognate object

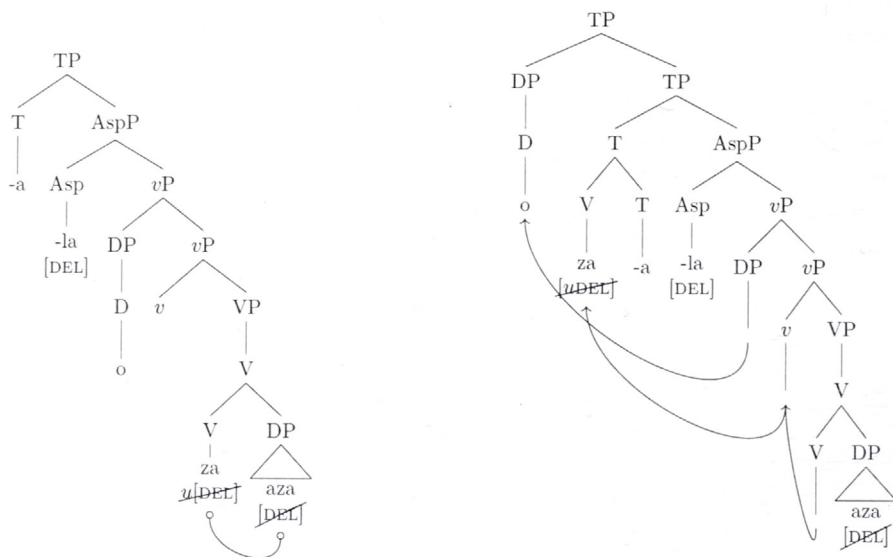


Figure 7: Trees for (1c) with cognate objects

One question that remains to be clarified is how emphasis is derived in a sentence like (7b). One possible approach is to say that a [del] feature that hasn't been deleted by valuing a verb is somehow computed as emphasis at LF. This would predict that a transitive verb in the perfective with a cognate object should read as emphatic; this is borne out in (4d) above, in contrast to (4c) which does not seem to carry an emphatic reading. Interestingly, the sentence in (14) was once given as “they are completely dead” and mentioned as being a way to express the proposition more emphatically than with the -rV form, though this does not seem to be how the sentence is always translated. As for transitive imperfectives, emphasis arises when a verb occurs both with a referential complement and a cognate object, as in (7b) and (8).

- (14) ó η^wō -ḡ -lā
 3SG die -VS -PFV
 They (3SG) died./They (3SG) are completely dead.

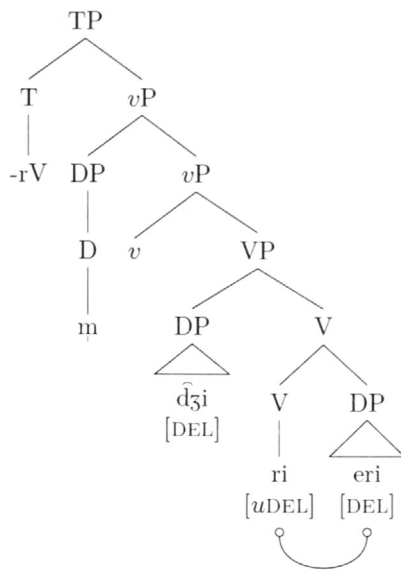


Figure 8: Tree for (7b)

6 Event features: toward a formalization and delimitation

In Section 3 we saw that what we have been calling “event delimitation” seems to consist of a number of distinct ways the semantics of an event can be altered. We have been lumping this all together, but it may be helpful to at least provide something of a framework within which these potentially distinct phenomena can be teased apart. One way I propose to do this is with the use of event (or eventuality) features, or \mathcal{E} -features, similar to their use by Crippen (2019). Crippen employs a functional head \mathcal{E} that undergoes agreement with V or with Asp depending on the context to value \mathcal{E} -features such as $[\text{state}_{\mathcal{E}}]$ and $[\text{durative}_{\mathcal{E}}]$.

If we posited an \mathcal{E} head for Igbo below Asp or v , we could have an unvalued feature $[u\mathcal{E}]$ on \mathcal{E} instead of on V. Different elements in the lexicon either have no \mathcal{E} -features or have a particular \mathcal{E} feature. These features may indicate telicity, perfectivity, adverbial modification, and/or some overlapping relationship between these and/or other features. The \mathcal{E} -head only needs to be valued by one to prevent derivation crash. The lexical specificity of what we have been calling event delimitedness now comes from whether V comes pre-specified with some \mathcal{E} -feature, which would be the case for intransitives such as *zo* ‘rain’ or *bla* ‘come.’ This all should allow \mathcal{E} -features that do not enter into a valuation relationship and thus are not deleted (or, all such features if we don’t stipulate deletion) to contribute semantic meaning that is actually related to the feature/lexical item itself rather than simply being a broad view of “emphasis.” This may help account for unexpected semantic contributions from the cognate object that seem to provide some aspectual restriction instead of emphasis, as in (4d). Incorporating a stative feature directly into the structure may also help to account for the differing distribution and semantic contribution of *-rV* across stative and eventive verbs (though see Amaechi (2020) for another view on *-rV*).

In the case of perfectives, \mathcal{E} will not be able to be valued by any head in its c-command domain but may either probe upward for Asp or be attracted to Asp where it can then undergo valuation. Alternatively, we could “cut out the middleman” and have Asp manage all eventuality features.

All of this remains hypothetical, and should be evaluated both empirically and theoretically. But this view, once sketched out more properly, should hopefully provide a framework and some direction to continue investigating phenomena discussed in this paper or those related to it.

References

- Aboh, Sopuruchi & Amarachi Onuorah. Dec. 30, 2020. Semelfactivity in Igbo. *Macrolinguistics* 8: 56–63. doi 10.26478/ja2020.8.13.4.
- Amaechi, Mary. 2020. *A'-Movement Dependencies and Their Reflexes in Igbo*. Universität Potsdam, 1953 KB, 3015 KB, i, 195 pages. doi 10.25932/PUBLISHUP-47152. url <https://publishup.uni-potsdam.de/47152>.
- Chinweude, N. U. *An Analysis of the Interface of Syntax and Semantics in Igbo Ergative Structures*. url <https://phd-dissertations.unizik.edu.ng/onepaper.php?p=67>.
- Crippen, James A. 2019. *The Syntax in Tlingit Verbs*. University of British Columbia. doi 10.14288/1.0388221. url <https://open.library.ubc.ca/soa/cIRcle/collections/ubctheses/24/items/1.0388221>.
- Emenanjo, Nolue. 2015. *A Grammar of Contemporary Igbo: Constituents, Features and Processes*. M & J Grand Orbit Communications. isbn 978-978-54215-2-1. url <https://muse.jhu.edu/pub/398/monograph/book/46371>.
- Enweonye, Chinedum & Francisca Ukwuoma Egwuekwe. 2015. A Contrastive Study of Negation in Amaiye and Standard Variety of Igbo. *undefined*. url <https://www.semanticscholar.org/paper/A-contrastive-study-of-negation-in-Amaiye-and-of-Enweonye-Egwuekwe/db481192a35fcbf561587368cf445a1f23e88685>.
- Ezenwafor, Chibunma Amara. May 2019. Negation in Ekwulobia Igbo. *IOSR Journal Of Humanities And Social Science*. 6th ser. 24(5): 10.
- Georgi, Doreen & Mary Amaechi. Nov. 30, 2022. Resumption in Igbo: Two Types of Resumptives, Complex Phi-Mismatches, and Dynamic Deletion Domains. *Natural Language & Linguistic Theory*. doi 10.1007/s11049-022-09558-x. url <https://doi.org/10.1007/s11049-022-09558-x>.
- Iloene, Modesta Ijeoma. 2013. SYMMETRIC PREDICATES IN IGBO: A SEMANTIC ANALYSIS.
- Kimper, Wendell. June 2008. Syntactic Reduplication and the Spellout of Movement Chains.
- Manfredi, Victor. Oct. 28, 1993. Verb Focus in the Typology of Kwa/Kru and Haitian. *Focus and Grammatical Relations in Creole Languages*: 3. url <https://www.jbe-platform.com/content/books/9789027276940-c11.12.05man>.
- 2012. Igbo Transitivity in a Derivational Framework. In. url <https://people.bu.edu/manfredi/IgboTransitivity.pdf>.
- Nunes, Jairo. Apr. 2001. Sideward Movement. *Linguistic Inquiry* 32(2): 303–344. doi 10.1162/00243890152001780. url <https://direct.mit.edu/ling/article/32/2/303-344/116>.
- Nwachukwu, P. Akujūqobi. 1987. *The Argument Structure of Igbo Verbs*. (Lexicon Project Working Papers).Cambridge, MA: Lexicon Project, MIT Center for Cognitive Science. 142 pp.
- Nweya, Gerald. Dec. 25, 2021. Articulate Structure of the Igbo Tense Phrase Domain.
- Nweya, Gerald Okechukwu. 2018. The Igbo Clause Structure and the Cartography of the Complementiser Phrase Domain: 242.
- Obiamalu, Greg. The Functional Category D in a Language without Determiners: The Case of Igbo (). url https://www.academia.edu/7048870/The_functional_category_D_in_a_language_without_determiners_The_case_of_Igbo.

Oha, Amechi. Nov. 19, 2008. *Direction of Research on Igbo Rv-Prepositional Applicative*.

Skinner, Tobin. July 2009. Head Movement and PF Spell-out: A Review. In. url https://www.mcgill.ca/linguistics/files/linguistics/Skinner_July09handout.pdf.

Uchechukwu, Chinedu & Martha Chidimma Egenti. 2015. Construal-Based Classification of Igbo Verbs.

